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Resumos das Comunicações

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Portuguese Journal of Cardiology

NEPARVIS®

Sacubitril/Valsartan

2 cp./dia

TEMPO é VIDA[1]

Escolha MAIS para os seus doentes[2,3]

Referências:

1- Gouveia M *et al.*; ESC Heart Fail. 2019. DOI:10,1002/ehf2.12399;

2 - McMurray JJ, *et al.* N Engll Med. 2014 Sep 11;371(11):993-1004;

3 - Desai AS, *et al.* Eur Heart J. 2015;36(30):1990-7.

Nota Importante: Antes de prescrever consulte o Resumo das Características do Medicamento. **APRESENTAÇÃO:** Neparvis 24 mg/26 mg: Cada comprimido revestido por película contém 24,3 mg de sacubitril e 25,7 mg de valsartan (como complexo de sal de sódio de sacubitril valsartan). Neparvis 49 mg/51 mg: Cada comprimido revestido por película contém 48,6 mg de sacubitril e 51,4 mg de valsartan (como complexo de sal de sódio de sacubitril valsartan). Neparvis 97 mg/103 mg: Cada comprimido revestido por película contém 97,2 mg de sacubitril e 102,8 mg de valsartan (como complexo de sal de sódio de sacubitril valsartan). **INDICAÇÕES TERAPÊUTICAS:** Neparvis está indicado em doentes adultos para o tratamento da insuficiência cardíaca crónica sintomática com fração de ejeção reduzida. **POSOLOGIA/MODO DE ADMINISTRAÇÃO.** ***Adultos:*** Em doentes que se encontram atualmente a tomar um Inibidor da Enzima de Conversão da Angiotenina (IECA) ou um Antagonista dos Recetores da Angiotensina (ARA), a dose inicial recomendada de Neparvis é um comprimido de 49 mg/51 mg duas vezes por dia. A dose deve ser duplicada a cada 2-4 semanas até à dose máxima que se pretende atingir e que é de um comprimido de 97 mg/103 mg duas vezes por dia, de acordo com o tolerado pelo doente. Se os doentes apresentarem problemas de tolerabilidade (Pressão Arterial Sistólica (PAS) ≤95 mmHg, hipotensão sintomática, hipercaliemia, disfunção renal), é recomendado ajuste posológico da medicação concomitante, redução temporária da dose ou descontinuação de Neparvis. Em doentes que não se encontram atualmente a tomar um inibidor da ECA ou um ARA ou a tomar doses baixas destes medicamentos, é recomendada uma dose inicial de 24 mg/26 mg duas vezes por dia e titulação lenta da dose (duplicação a cada 3-4 semanas). O tratamento não deve ser iniciado em doentes com níveis de potássio sérico >5,4 mmol/l ou com PAS <100 mmHg. Para doentes com PAS entre 100 e 110 mmHg, deve ser considerada uma dose inicial de 24 mg/26 mg duas vezes por dia. Neparvis pode ser tomado com ou sem alimentos. ***Doentes idosos:*** A dose deve ser ajustada de acordo com a função renal do doente idoso. População pediátrica: A segurança e eficácia de Neparvis em crianças e adolescentes com idade inferior a 18 anos não foram estabelecidas. Não existem dados disponíveis. ***Compromisso renal:*** Não é necessário ajuste posológico em doentes com compromisso renal ligeiro (Taxa de Filtração Glomerular Estimada (TFGe) 60-90 ml/min/1,73 m^2). Deve ser considerada uma dose inicial de 24 mg/26 mg duas vezes por dia para doentes com compromisso renal moderado (TFGe 30-60 ml/min/1,73m^2). Como a experiência clínica em doentes com compromisso renal grave (TFGe <30 ml/min/1,73 m^2) é muito limitada, Neparvis deve ser utilizado com precaução e recomenda-se uma dose inicial de 24 mg/26 mg duas vezes por dia. Não existe experiência em doentes com doença renal terminal e a utilização de Neparvis não é recomendada nesta população de doentes. ***Compromisso hepático:*** Não é necessário ajuste posológico quando se utilizar Neparvis em doentes com compromisso hepático ligeiro (Child-Pugh A). A experiência clínica em doentes com compromisso hepático moderado (Child-Pugh B) ou com valores de AST/ALT duas vezes superiores ao limite superior normal é limitada. Neparvis deve ser utilizado com precaução nestes doentes e a dose inicial recomendada em doentes com insuficiência hepática moderada (Child-Pugh B) é de 24 mg/26 mg duas vezes por dia. Neparvis está contraindicado em doentes com compromisso hepático grave, cirrose biliar ou colestase (Child-Pugh C). **CONTRAINDICAÇÕES:** Hipersensibilidade às substâncias ativas ou a qualquer um dos excipientes. Uso concomitante com IECA. Neparvis não deve ser administrado até 36 horas após a descontinuação da terapêutica com um IECA. História conhecida de angioedema relacionado com a terapêutica com IECA ou ARA. Angioedema hereditário ou idiopático. Uso concomitante com medicamentos contendo aliscireno em doentes com diabetes *mellitus* ou em doentes com compromisso renal (TFGe <60 ml/min/1,73 m^2). Compromisso hepático grave, cirrose biliar e colestase. Segundo e terceiro trimestres de gravidez. **ADVERTÊNCIAS/ PRECAUÇÕES:** ***Duplo bloqueio do sistema renina-angiotensina-aldosterona (SRAA):*** A associação de Neparvis com um IECA é contraindicada devido ao aumento de risco de angioedema. Neparvis não deve ser iniciado até 36 horas após a última dose da terapêutica com um IECA. Se o tratamento com Neparvis for interrompido, a terapêutica com um IECA não deve ser iniciada até 36 horas após a última dose de Neparvis. A associação de Neparvis com inibidores diretos da renina, como o aliscireno, não é recomendada. A associação de Neparvis com medicamentos contendo aliscireno é contraindicada em doentes com diabetes *mellitus* ou em doentes com compromisso renal (TFGe <60 ml/min/1,73 m^2). Neparvis contém valsartan e, portanto, não deve ser coadministrado com outro medicamento contendo um ARA. ***Hipotensão:*** O tratamento com Neparvis só deve ser iniciado se a PAS for ≥100 mmHg. Os doentes com PAS <100 mmHg não foram estudados. Durante os estudos clínicos foram notificados casos de hipotensão sintomática em doentes tratados com Neparvis, especialmente em doentes com idade ≥65 anos, doentes com doença renal e doentes com PAS baixa (<112 mmHg). Quando se iniciar a terapêutica ou durante o ajuste da dose com Neparvis, a pressão arterial deve ser monitorizada por rotina. Se ocorrer hipotensão, recomenda-se a redução temporária da dose ou a descontinuação de Neparvis. Deve ser considerado o ajuste posológico de diuréticos e anti hipertensores utilizados concomitantemente e o tratamento de outras causas de hipotensão (ex. hipovolémia). É mais provável que ocorra hipotensão sintomática se o doente apresentar depleção de volume p. ex. por terapêutica diurética, restrição dietética de sal ou vómitos. A depleção de volume e/ou de sódio deve ser corrigida antes do início do tratamento com Neparvis. No entanto, tal ação corretiva deve ser cuidadosamente ponderada comparativamente ao risco de sobrecarga de volume. ***Compromisso renal:*** A avaliação dos doentes com insuficiência cardíaca deve incluir sempre a avaliação da função renal. Os doentes com compromisso renal ligeiro e moderado têm maior risco de desenvolver hipotensão. A experiência clínica em doentes com compromisso renal grave (TFGe <30 ml/ min/1,73 m^2) é muito limitada e estes doentes podem ter um maior risco de hipotensão. Não existe experiência em doentes com doença renal terminal e a utilização de Neparvis não é recomendada nesta população de doentes. ***Agravamento da função renal:*** A utilização de Neparvis pode estar associada ao agravamento da função renal. O risco pode ser ainda aumentado por desidratação ou uso concomitante de AINE. Deve ser considerado o ajuste posológico para uma dose inferior em doentes que apresentem um declínio da função renal clinicamente significativo. ***Hipercaliemia:*** O tratamento com Neparvis não deve ser iniciado se o nível de potássio sérico for >5,4 mmol/l. A utilização de Neparvis pode estar associada a um risco aumentado de hipercaliemia. Porém, pode também ocorrer hipocaliemia. É recomendada a monitorização do potássio sérico, especialmente em doentes que apresentam fatores de risco tais como compromisso renal, diabetes *mellitus* ou hipoaldosteronismo ou que têm uma dieta rica em potássio. Caso os doentes desenvolvam uma hipercaliemia clinicamente significativa, é recomendado o ajuste da medicação concomitante ou a redução temporária da dose ou a descontinuação de Neparvis. Se o nível de potássio sérico for >5,4 mmol/l deve ser considerada a descontinuação. ***Angioedema:*** Têm sido notificados casos de angioedema em doentes tratados com Neparvis. Se ocorrer angioedema, Neparvis deve ser imediatamente descontinuado e devem ser iniciados a terapêutica e o acompanhamento apropriados, até à resolução completa e sustentada dos sinais e sintomas apresentados. Nesses casos Neparvis não deve ser administrado novamente. Nos casos de angioedema confirmado onde o edema esteve confinado à face e lábios, a condição foi geralmente resolvida sem tratamento, embora a utilização de anti-histamínicos tenha sido útil no alívio dos sintomas. O angioedema associado a edema da laringe pode ser fatal. Quando houver envolvimento da língua, glote ou laringe com probabilidade de causar obstrução das vias aéreas, deve ser administrada, imediatamente, terapêutica apropriada, p. ex. solução de adrenalina 1 mg/1 ml (0,3 - 0,5 ml), e/ou medidas necessárias para garantir a desobstrução das vias aéreas. Doentes com antecedentes de angioedema não foram estudados. Uma vez que poderão apresentar um risco aumentado de desenvolver angioedema, Neparvis deve ser utilizado com precaução nesta população de doentes. Neparvis está contraindicado em doentes com história conhecida de angioedema relacionado com a terapêutica com um IECA ou ARA ou com angioedema hereditário ou idiopático. Doentes de raça negra têm suscetibilidade aumentada para desenvolver angioedema. ***Doentes com estenose da artéria renal:*** Em doentes com estenose unilateral ou bilateral da artéria renal, Neparvis pode aumentar a ureia sanguínea e os níveis de creatinina sérica. É necessária precaução na administração de Neparvis em doentes com estenose da artéria renal e é recomendada a monitorização da sua função renal. ***Doentes com classe funcional NYHA IV:*** Deve ter-se precaução quando se inicia Neparvis em doentes com classificação funcional NYHA IV devido à limitada experiência clínica nesta população. ***Peptídeo natriurético tipo B (BNP):*** O BNP não é um biomarcador adequado da insuficiência cardíaca em doentes tratados com Neparvis porque é um substrato da neprilisina. ***Doentes com compromisso hepático:*** A experiência clínica em doentes com compromisso hepático moderado (Child-Pugh B) ou com valores de AST/ALT duas vezes superiores ao limite superior normal é limitada. Nestes doentes, a exposição pode ser aumentada e a segurança não está estabelecida. Assim, recomenda-se precaução na utilização de Neparvis nesta população de doentes. Neparvis está contraindicado em doentes com compromisso hepático grave, cirrose biliar ou colestase (Child-Pugh C). **INTERAÇÕES:** ***Utilização concomitante contraindicada:*** o uso concomitante de Neparvis com medicamentos contendo aliscireno é contraindicado em doentes com diabetes *mellitus* ou em doentes com compromisso renal (TFGe <60 ml/min/1,73 m^2). O uso concomitante de Neparvis com IECA é contraindicado. Neparvis não deve ser iniciado até 36 horas após a última dose da terapêutica com um IECA. A terapêutica com um IECA não deve ser iniciada até 36 horas após a última dose de Neparvis. ***Utilização concomitante não recomendada:*** com outros medicamentos contendo ARA. A associação de Neparvis com inibidores diretos da renina, como o aliscireno não é recomendada. ***Utilização concomitante requerendo precauções***: Substratos OATP1B1 e OATP1B3 (ex. estatinas). Inibidores PDE5 incluindo sildenafil. Diuréticos poupadores de potássio (triamtereno, amilorida), antagonistas dos mineralocorticoides (ex. espironolactona, eplerenona), suplementos de potássio, substitutos do sal contendo potássio ou outros fármacos (tais como heparina). Anti-inflamatórios não esteroides (AINE), incluindo inibidores seletivos da ciclooxigenase-2 (inibidores COX-2). Lítio. Furosemida. Nitratos (ex. nitroglicerina). inibidores de OATP1B1, OATP1B3, OAT3 (ex. rifampicina, ciclosporina), OAT1 (ex. tenofovir, cidofovir) ou MRP2 (ex. ritonavir). Metformina. ***Sem interação significativa***: Digoxina, varfarina, hidroclorotiazida, amlodipina, omeprazol, carvedilol ou a associação de levonorgestrel/ etinil estradiol. **GRAVIDEZ/ALEITAMENTO:** A utilização de Neparvis não é recomendada durante o primeiro trimestre de gravidez e é contraindicada durante o segundo e terceiro trimestres de gravidez. Desconhece-se se Neparvis é excretado no leite humano. Devido ao risco potencial de reações adversas em recém-nascidos/lactentes, não é recomendado durante a amamentação. **EFEITOS INDESEJÁVEIS:** ***Muito frequentes (≥1/10):*** hipercaliemia, hipotensão, compromisso renal ***Frequentes (≥1/100, <1/10):*** anemia, hipocaliemia, hipoglicemia, tonturas, cefaleias, síncope, vertigens, hipotensão ortostática, tosse, diarreia, náuseas, gastrite, insuficiência renal (insuficiência renal, insuficiência renal aguda), fadiga, astenia ***Pouco frequentes (≥1/1.000, <1/100):*** hipersensibilidade, tonturas posturais, prurido, erupção cutânea, angioedema. **TITULAR DA AUTORIZAÇÃO DE INTRODUÇÃO NO MERCADO**: Novartis Europharm Limited. **REPRESENTANTE LOCAL:** SERVIER PORTUGAL – Especialidades Farmacêuticas, Lda. - Av. António Augusto de Aguiar, 128 - 1069-133 LISBOA – Telefone: 213122000 / Fax: 213122090 / e-mail: servier.portugal@servier.com. **Escalão de comparticipação:** B. A decisão de comparticipação de Neparvis está condicionada à população elegível, nomeadamente: doentes com insuficiência cardíaca com fração de ejeção reduzida (FEVE ≤35%); doentes com sintomas de insuficiência cardíaca classe II ou III (NYHA), apesar de tratamento, há pelo menos 4 semanas, com IECA ou ARA em combinação com beta-bloqueante, associados a outros tratamentos recomendados como diuréticos e/ou antagonistas da aldosterona, se tolerados. O tratamento com Neparvis deve ser iniciado por médicos com experiência no tratamento de insuficiência cardíaca. Medicamento sujeito a receita médica. Para mais informações deverá contactar o titular da AIM/representante local do titular da AIM. NEP_RCM20210211_IEC_v4. **RCM aprovado em Fevereiro de 2021. IECRCM 09.03.2021**

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Congresso Português de Cardiologia 2021

Sejamos bem-vindos ao CPC 2021

O grande evento científico nacional que é o CPC 2021 apresenta-se em formato digital, inaugurado na edição prévia com o sucesso generalizadamente reconhecido. Ainda assim procuramos expandir e renovar com base em novas tecnologias de comunicação e na participação efetiva da maioria dos centros de cardiologia nacionais. Desde logo a Comissão Organizadora incluiu representantes de todas as áreas de diferenciação da cardiologia, de norte a sul do país. Depois a procura de soluções tecnológicas trouxe para dentro do CPC 2021 plataformas digitais de elevada qualidade permitindo-nos receber condignamente a melhor produção científica nacional.

Este CPC que agora começa sob o lema «Sinergias em Cardiologia» apresenta-se com um programa diversificado, inovador assumidas as atuais limitações, mas sobretudo integrador. O admirável novo mundo digital permitiu-nos obter a participação de nomes maiores da cardiologia e cirurgia cardíaca internacionais, que seguramente trarão luz a tantas áreas cinzentas ou controversas do conhecimento científico e da prática clinica. Tendo sido elaborado a uma curta distância do CPC 2020, foi construído numa perspetiva de discussão multidisciplinar abarcando todas as áreas de intervenção cardiológica e representantes de toda a cardiologia nacional. O CPC 2021 é sem dúvida o resultado do trabalho concertado e empenhado da Comissão Organizadora, do Departamento de Congressos e da Direção da SPC, mas também dos grupos de estudo, núcleos, associações especializadas e de tantos sócios cujo contributo individual é assaz importante. Nunca é demais agradecer a todos os cardiologistas que aceitaram participar como revisores de trabalhos científicos, membros de júri de casos clínicos, de imagem, de prémios ou bolsas científicas, bem como moderadores, membros de discussão em painel e presidentes de conferências.

Finalmente e não menos importante um agradecimento à indústria farmacêutica e de dispositivos, pelo envolvimento neste evento científico maior do panorama nacional, como parceiros efetivos de longa data, sem os quais grande parte da produção dos CPC não seria possível. Para eles o CPC 2021 encontrou o que pensamos ser de momento a melhor plataforma digital de expositores técnicos, capaz de abrir janelas amplas para a educação médica continuada.

Vamos então desfrutar tudo o que este CPC 2021 tem para nos oferecer, procurando construir pontes de conhecimento de modo a criar as *sinergias* necessárias para melhor cuidar de quem de nós precisa.

Um CPC 2021 de excelência para todos!

Regina Ribeiras
Presidente do Congresso Português de Cardiologia 2021

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Portuguese Congress of Cardiology 2021

Welcome to the 2021 Portuguese Congress of Cardiology!

The major national scientific event, the Portuguese Congress of Cardiology, will take place in virtual format, as pioneered in the previous Congress to general acclaim, and which we aim to expand and renew based on new communications technology to ensure the full participation of most cardiology centers in Portugal. From the outset the Organizing Committee included representatives of all specialist areas of cardiology from all over the country. After investigating different technological solutions, high-quality digital platforms were incorporated into the 2021 Congress that have enabled us to present the best of Portuguese scientific production in the best possible way. The upcoming Congress has the theme "Synergies in Cardiology". It presents a diverse program that, given the limitations imposed by the current situation, is innovative but more importantly, integrative. The brave new digital world has enabled us to secure the participation of prominent names from international cardiology and cardiac surgery, who will be able to shed light on gray areas and controversies in both scientific knowledge and clinical practice. The 2021 Congress, work on which began shortly after the 2020 edition, has been designed from the standpoint of multidisciplinary discussions covering all areas of cardiology and cardiac surgery and representing all aspects of Portuguese cardiology. It is the result of the concerted efforts and commitment of the Organizing Committee, the Congress Department and the Board of the Portuguese Society of Cardiology (SPC), as well as of the Society's working groups, study groups, specialist associations and all the SPC's members who have made such important contributions. To all the cardiologists who have agreed to participate as reviewers of scientific works, jury members for clinical and imaging case-based sessions, for scientific prizes and grants, moderators, members of discussion panels and chairs of talks, we cannot thank you enough. Last but not least, we are also grateful to the pharmaceutical and medical device industry for their involvement in this major event in the national scientific calendar. They have long been important partners without whom a large proportion of the Congress's production would not be possible. The 2021 Congress incorporates the best digital plat- form for the industry to display its wares, offering significant opportunities for continuing medical education. Let us then enjoy everything that this 2021 Congress has to offer, and seek to build bridges of knowledge in order to create the synergies required to provide the best possible care for those in need. We wish all of you an excellent 2021 Congress.

Regina Ribeiras
President of the 2021 Portuguese Congress of Cardiology

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Referências: 1. Pinney JH, Whelan CJ, Petrie A, *et al.* Senile systemic amyloidosis: clinical features at presentation and outcome. *J Am Heart Assoc.* 2013;2(2):e000098.
2. RCM Vyndaqel 61mg. Outubro 2020. **3.** Maurer M *et al. N Engl J Med.* 2018 Sep 13;379(11):1007-1016.

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COMUNICAÇÕES ORAIS (CO)

Congresso Português de Cardiologia 2021 (CPC2021)

30 de Abril a 2 de Maio de 2021

Sexta-feira, 30 Abril de 2021 | 10H30-11H30

Sala Virtual 2 | CO 01 - Doença coronária

CO 4. ISCHEMIA LBBB STUDY - IS AN ANATOMICAL APPROACH SUPERIOR TO A FUNCTIONAL APPROACH FOR THE DIAGNOSIS OF OBSTRUCTIVE CORONARY ARTERY DISEASE IN PATIENTS WITH LEFT BUNDLE BRANCH BLOCK?

Pedro Teixeira Carvalho[1], Adriana Pacheco[1], Diana Carvalho[1], Lisa Ferraz[1], José Luís Martins[1], Manuela Vieira[1], Nuno Ferreira[2], Ana Briosa Neves[1]

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Introduction: The diagnostic investigation of obstructive coronary artery disease (CAD) in the presence of left bundle branch block (LBBB) or ventricular pacing (VP) is challenging because the inherent changes in ventricular depolarization may cause wall motion abnormalities or septal perfusion defects. These have been described as causes for false positive ischemia tests. The authors hypothesised that an anatomic test - computerized tomography coronary angiogram (CTCA) - might be more suitable than functional tests - single-photon emission computed tomography myocardial perfusion imaging (SPECT-MPI) and dobutamine stress echocardiography (DSE) - for the diagnosis of CAD in these patients.

Methods: This was an observational multicentre study including consecutive patients with LBBB or VP referred for SPECT-MPI, DSE and CTCA. An analysis of accuracy, false discovery rate (FDR) and ROC curve was performed, including patients referred to coronary angiography (CA) after these exams. Exclusion criteria were acute coronary syndrome or previous CAD with incomplete revascularization. To avoid referral bias, a second analysis was performed evaluating the normalcy rate (NR) in a sample of low-risk patients (pre-test probability < 10%). A modified NR was used due to the reduced referral of patients with a pre-test probability < 5%.

Results: Of the 346 patients included in the study, 132 were referred to CA - 77 after SPECT-CT, 28 after DSE and 27 after CCTA. The median age was 68 years (95%CI 60-75), 59% were male and 9% had undergone previous revascularization. CA revealed CAD in 32%, similar for all non-invasive exams (30%, 36% and 33% for SPECT-MPI, DSE and CTCA respectively, p = 0.836). Accuracy was significantly inferior for SPECT (34%) than DSE (68%, p = 0.003) or CTCA (63%, p = 0.012). FDR was significantly higher for SPECT-MPI (71%) than DSE (44%, p = 0.049) and similar to CTCA (53%, p = 0.167). There was no significant difference between CTCA and DSE (p = 0.781 for accuracy, p = 0.746 for FDR). The ROC curves revealed that SPECT-MPI was a poor discriminator of CAD in these patients (AUC 0.503, 95%CI 0.361-0.644). DSE (AUC 0.700, 95%CI 0.503-0.897) and CTCA (AUC 0.722, 95%CI 0.533-0.911) were decent discriminators. For the modified NR analysis, 214 low risk patients were included (93 for SPECT-CT, 40 for DSE and 81 for CCTA). Median age was 60 years (95%CI 54-64), 43% were male. The modified NR was significantly inferior for SPECT-MPI (27%) than DSE (83%, p < 0.001) or CTCA (85%, p < 0.001), but not significantly different between DSE and CTCA (p = 0.792).

Table 1: Accuracy analysis - diagnostic performance and comparison between exams

	SPECT-MPI (n=77)	DSE (n=28)	CTCA (n=27)
Positive	91% (n=70)	54% (n=18)	70% (n=19)
Negative	9% (n=7)	36% (n=10)	30% (n=8)
Accuracy	34%	68%	63%
False discovery rate	71%	44%	53%
False omission rate	14%	10%	0%

SPECT-MPI vs. DSE	SPECT-MPI vs. CTCA	DSE vs. CTCA
p= .003	***p= .012***	*p= .781*
p= .049	*p= .167*	*p= .746*
p= .999	*p= .467*	*p= .999*

Conclusions: In patients with LBBB or VP, SPECT-MPI performed poorly for the diagnosis of CAD, with a low accuracy, high FDR and a low modified NR. Despite the poor performance of SPECT-MPI, DSE and CTCA performed well, suggesting that an anatomical based approach is not superior to a functional based approach for the diagnosis of CAD in these patients.

CO 5. INCORPORATING CORONARY CALCIFICATION INTO PRETEST ASSESSMENT OF THE LIKELIHOOD OF CORONARY ARTERY DISEASE-VALIDATION AND RECALIBRATION OF A NEW DIAGNOSTIC TOOL

Pedro M. Lopes[1], João Presume[1], Pedro de Araújo Gonçalves[2], Francisco Albuquerque[1], Pedro Freitas[1], Sara Guerreiro[1], João Abecasis[1], Ana Coutinho Santos[1], Carla Saraiva[1], Miguel Mendes[1], Hugo Marques[2], António M. Ferreira[1]

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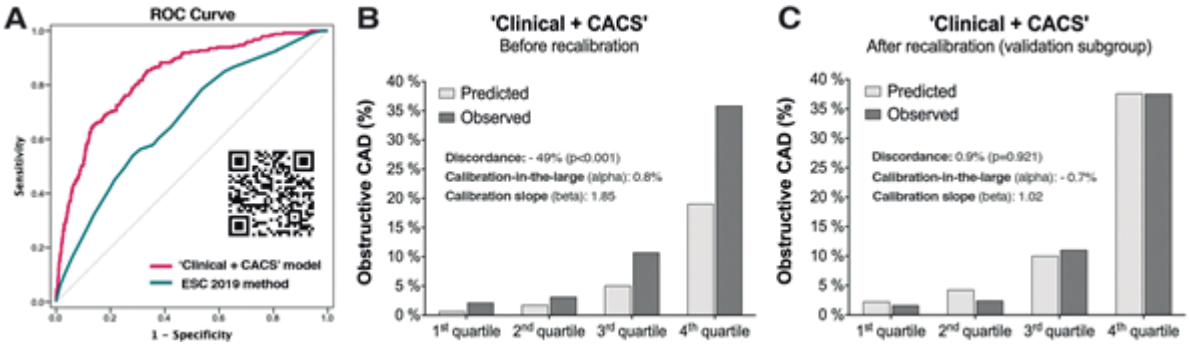
Introduction: A new clinical tool was recently proposed to improve the estimation of pre-test probability of obstructive coronary artery disease (CAD) by incorporating coronary artery calcium score (CACS) with clinical risk factors. This new model (Clinical+CACS) showed improved prediction when compared to the method recommended by the 2019 ESC guidelines on chronic coronary syndromes, but was never tested or adjusted for use in our population. The aim of this study was to assess the performance of this new method in a Portuguese cohort of symptomatic patients referred for coronary computed tomography angiography (CCTA), and to recalibrate it if necessary.
Methods: We conducted a two-center cross-sectional study assessing symptomatic patients who underwent CCTA for suspected CAD. Key exclusion criteria were age < 30 years, known CAD, suspected acute coronary syndrome, or symptoms other than chest pain or dyspnea. Obstructive CAD was defined as any luminal stenosis ≥ 50% on CCTA. The Clinical+CACS prediction model was assessed for discrimination and calibration. A logistical recalibration of the model was conducted in a random sample of 50% of the patients and subsequently validated in the other half.
Results: A total of 1,910 patients (mean age 60 ± 11 years, 60% women) were included in the analysis. Symptom characteristics were: 39% non-anginal chest pain, 30% atypical angina, 19% dyspnea and 12% typical angina. The observed prevalence of obstructive CAD was 12.9% (n = 247). Patients with obstructive CAD were more often male, were significantly older, had higher prevalence of typical angina and cardiovascular risk factors, and higher CACS values. The new Clinical+CACS tool showed greater discriminative power than the ESC 2019 prediction model, with a C-statistic of 0.83 (95%CI 0.81-0.86) versus 0.67 (95%CI 0.64-0.71), respectively (p-value for comparison < 0.001). Before recalibration, the Clinical+CACS model underestimated the likelihood of CAD in our population across all quartiles of pretest probability (mean relative underestimation of 49%), which was subsequently corrected by the recalibration procedure (Figure).
Conclusions: In a Portuguese cohort of symptomatic patients undergoing CCTA for suspected CAD, the new Clinical+CACS model showed better discrimination power than the 2019 ESC method. The underestimation of the Clinical+CACS model was corrected by recalibrating it for our population. This new tool might prove useful for guiding decisions on the need for further testing.

CO 2. RAPID ATRIAL FIBRILLATION INCREASES CARDIAC BIOMARKERS: DECISION TO PERFORM CORONARY ANGIOGRAPHY BASED ON NOVEL HIGH-SENSITIVITY TROPONIN I PEAK

Ana Fátima Esteves[1], Leonor Parreira[1], Marta Fonseca[1], José Maria Farinha[1], Antonio Pinheiro Cumena Candjondjo[1], Joana Silva Ferreira[1], Rui Antunes Coelho[2], Dinis Mesquita[1], Pedro Amador[1], Nuno Fonseca[1], Ricardo Santos[2], Filipe Seixo[1], Cátia Costa[1], Rui Caria[1]

[1]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [2]Centro Hospitalar de Setúbal/ACES Arrábida.

Introduction: Since January 2018 the availability of high sensitivity Troponin I (hsTnI) has improved ischemia diagnosis. In patients with rapid atrial fibrillation (AF), the decision to undergo coronary angiography is usually due to elevated cardiac biomarkers. However, evidence to support the rentability of this approach is sparse.
Objectives: Evaluate if hsTnI in patients with rapid AF and elevated cardiac biomarkers has a good discriminative power to predict a positive coronary angiography.
Methods: We retrospectively studied consecutive patients admitted to the emergency department (ED) between January 2018 and December 2019 with rapid AF that underwent coronary angiography and had multiple hsTnI values obtained. We analysed risk factors, initial and peak hsTnI, time from ED admission to peak hsTnI and ST-T segment abnormalities (ST depression and/or T wave inversion). We evaluated the presence of significant coronary artery stenosis with the need of revascularization at coronary angiography. Univariable and multivariable analysis was performed to obtain the Odds Ratio (OR, 95%CI, p-value) for significant coronary artery disease (CAD). Receiver operator characteristics (ROC) curve and area under the curve (AUC) were obtained to determine the discriminative power of peak hsTnI as predictor of a positive coronary angiography. Optimal cut-point value was obtained (Youden index) and patients were divided according to this value.
Results: From 1,407 patients admitted to the ED with rapid AF, 30 patients, 60% male, median age 74 (IQR 61.25-80.75) years, were submitted to coronary angiography. Significant coronary artery stenosis was present in 17 (57%) patients. Age, ST-T segment abnormalities and peak hsTnI were predictors of significant CAD, respectively 1.203, 1.064-1.361, 0.003; 25.00, 3.522-177.477, 0.001; and 1.000, 1.000-1.001, 0.015. Optimal cut-point value for predicting the presence of significant coronary artery stenosis at coronary angiography was a peak hsTnI of 359 pg/mL (AUC 0.869, p-value 0.001, 95%CI 0.742-0.995). The two groups with hsTnI < 359 and hsTnI > 359 differed in age and ST-T segment abnormalities (Table). After adjustment, peak hsTnI >359 pg/mL was the only independent predictor of significant CAD (23.894, 1.310-435.669, 0.032).



CO 5 Figure

	Total sample n=30	Peak hsTnI <359 pg/mL n=10	Peak hsTnI >359 pg/mL n=20	p-value
Peak hsTnI, median (IQR)	1928.25 (66.28-6005.78)	36.25 (22.55-66.27)	5138.90 (1704.48-8402.95)	<0.001
Age in years, median (IQR)	74 (61.25-80.75)	61 (57.50-74.25)	77 (67.25-84.75)	0.014
Time from ED admission to peak hsTnI in hours, median (IQR)	14.7 (5.285-22.93)	6.74 (2.63-39.73)	17.18 (12.06-22.93)	0.696
Type 2 diabetes mellitus, n (%)	10 (33.3)	3 (33.3)	7 (35.0)	0.999
Previous history of CAD, n (%)	6 (20.0)	2 (20.0)	4 (20.0)	0.999
ST-T segment abnormalities, n (%)	18 (60.0)	2 (20.0)	16 (80.0)	0.004

Conclusions: In this group of patients with rapid AF, peak hsTnI >359 pg/mL was the only independent predictor of significant coronary artery disease. Therefore, those patients should undergo coronary angiography.

CO 1. AGE AND FUNCTIONAL RELEVANCE OF CORONARY STENOSIS: A POST-HOC ANALYSIS OF THE ADVISE II TRIAL

D. Faria[1], Joo Myung Lee[2], Tim Van Der Hoef[3], Hernán Mejía-Rentería[4], Mauro Echavarría-Pinto[5], Sérgio Bravo Baptista[6], Enrico Cerrato[7], Hector García-García[8], Justin Davies[9], Yoshinobu Onuma[10], Habib Samady[11], Jan j Piek[3], Patrick W. Serruys[9], Amir Lerman[12], Javier Escaned[4]

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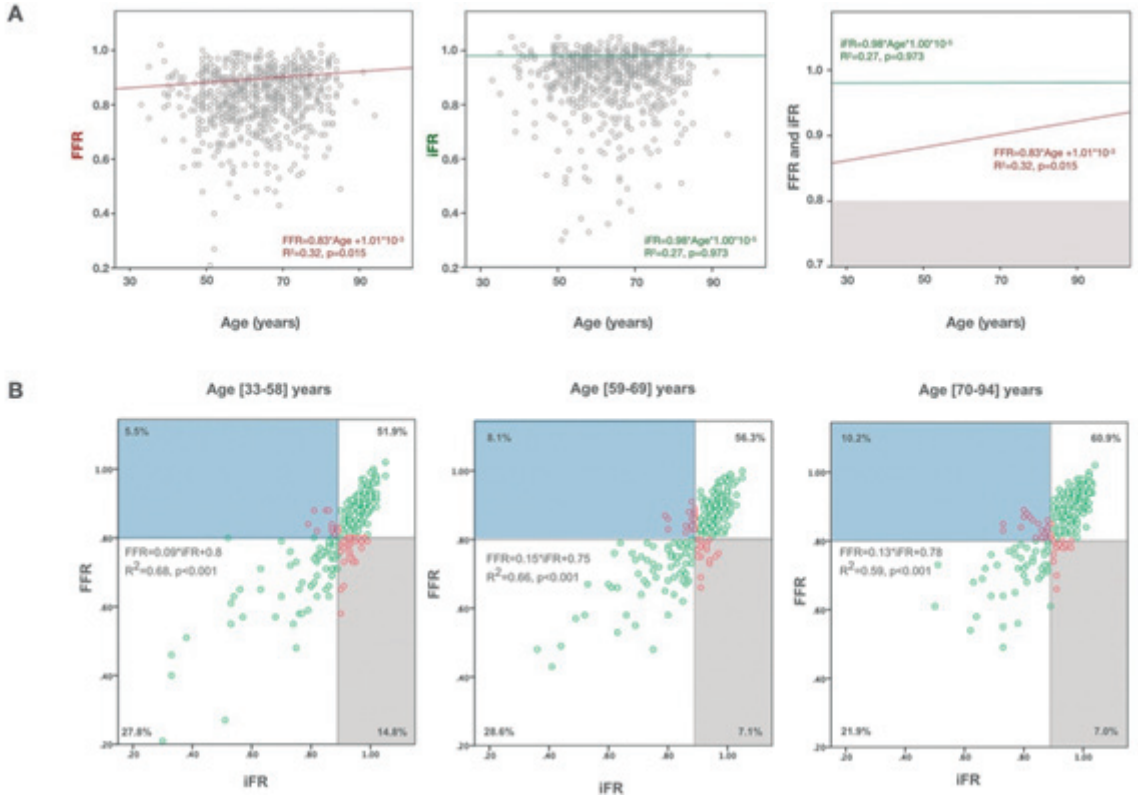
Objectives: The influence of age-dependent changes on fractional flow reserve (FFR) or instantaneous free-wave ratio (iFR) and the response to pharmacological hyperaemia has not been investigated. We investigated the impact of age on these indices.

Methods and results: This is as post-hoc analysis of the ADVISE II trial, including a total of 690 pressure recordings (in 591 patients). Age-dependent correlations with FFR and iFR were calculated and adjusted for stenosis severity. Patients were stratified into three age terciles. The hyperaemic response to adenosine, calculated as the difference between resting and hyperaemic pressure ratios, and the prevalence of FFR-iFR discordance were assessed. Correlations between coronary physiology indices and age were adjusted for several potential cofounders, including: visual lesion severity, interrogated target vessel with proximal LAD artery lesion, presence of hypertension, diabetes, renal failure, number of vessels interrogated per patient and patients presenting with an ACS. Age correlated positively with FFR (r^2 = 0.08, 95%CI: 0.01 to 0.15, p = 0.015), but not with iFR (r^2 = -0.03, 95%CI: -0.11 to 0.04, p = 0.411) (Figure A). The hyperaemic response to adenosine decreased with patient age (0.12 ± 0.07, 0.11 ± 0.06, 0.09 ± 0.05, for the 1st [33-58 years], 2nd [59-69 years] and 3rd [70-94 years] age tertiles, respectively, p < 0.001) and showed significant correlation with age (r^2 = -0.14, 95%CI -0.21 to -0.06, p < 0.001). The proportion of patients with FFR≤ 0.80 + iFR>0.89 discordance doubled in the first age-tercile (14.1% vs 7.1% vs 7.0%, p = 0.005) (Figure B).

Conclusions: The hyperaemic response of the microcirculation to adenosine administration is age-dependent. FFR values increase with patient age, while iFR values remain constant across the age spectrum. These



CO 1 Figure

findings contribute to explain differences observed in functional stenosis classification with hyperaemic and non-hyperaemic coronary indices.

CO 3. PRE-TEST PROBABILITY OF CHRONIC CORONARY SYNDROME

Miguel Carias de Sousa, Francisco Cláudio, Rita Rocha, Mafalda Carrington, João Pais, Diogo Brás, Rui Guerreiro, Ângela Bento

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Introduction: The pre-test probability (PTP) of a patient with clinical suspicion of chronic coronary syndrome (CCS) can be calculated through sex, age and symptoms, namely characteristic of chest pain and the presence or not of dyspnea, the latter included in the last CCS guidelines (2019). The 2013 ESC guidelines used the updated Diamond and Forrester model to calculate PTP. The most recent 2019 guidelines changed the calculation method. However, PTP depends on the prevalence of CAD in the population, so the under or over-estimation of PTP can have consequences in the approach of each patient.
Objectives: Compare the Diamond-Forrester model, defended by the 2013 guidelines, with the model presented in the most recent guidelines (2019), with the prevalence of coronary artery disease to see which is closer to reality.
Methods: Unicentric retrospective observational study. Patients undergoing cardiac catheterization for suspected chronic coronary syndrome with a positive ischemia test were included, including exercise stress test (treadmill ergometer), stress echocardiogram, scintigraphy or cardiac magnetic resonance. Each patient's PTP was calculated using the Diamond-Forrester model (2013 guidelines) and the model presented in the most recent guidelines. Both methods were compared with the prevalence of obstructive coronary artery disease diagnosed by cardiac catheterization, defined by the presence of coronary lesion, with luminal stenosis ≥ 50%. Statistical analysis performed using STATA v13, with $p < 0.05$ being considered as statistically significant.
Results: 2,472 patients were included, 62.66% male, with an average age of 65.13 ± 9.98 years-old. Regarding cardiovascular risk factors, 69.66% had dyslipidemia, 35.76% diabetes mellitus and 82.36% arterial hypertension. The prevalence of CAD in the analyzed sample was higher than the PTP calculated either by the Diamond Forrester method and by the new method in patients of both sexes with atypical chest pain, non-cardiac chest pain and dyspnea ($p < 0.05$). In patients of both sexes with typical chest pain, the Diamond Forrester method overestimated and the new model underestimated the prevalence of CAD.
Conclusions: The new guidelines changed the method of calculating PTP, and this new method underestimates the prevalence of CAD, moving further away from the reality observed in our population. Between the two methods of calculation compared, the Diamond Forrester model was the one that came closest to the reality of our population.

Sexta-feira, 30 Abril de 2021 | 09H00-10H15

Estúdio 4 Porto Douro | CO 07 - Miocardiopatias Infiltrativas

CO 36. IATROGENIC TRANSTHYRETIN CARDIAC AMYLOIDOSIS AFTER SEQUENTIAL LIVER TRANSPLANTATION

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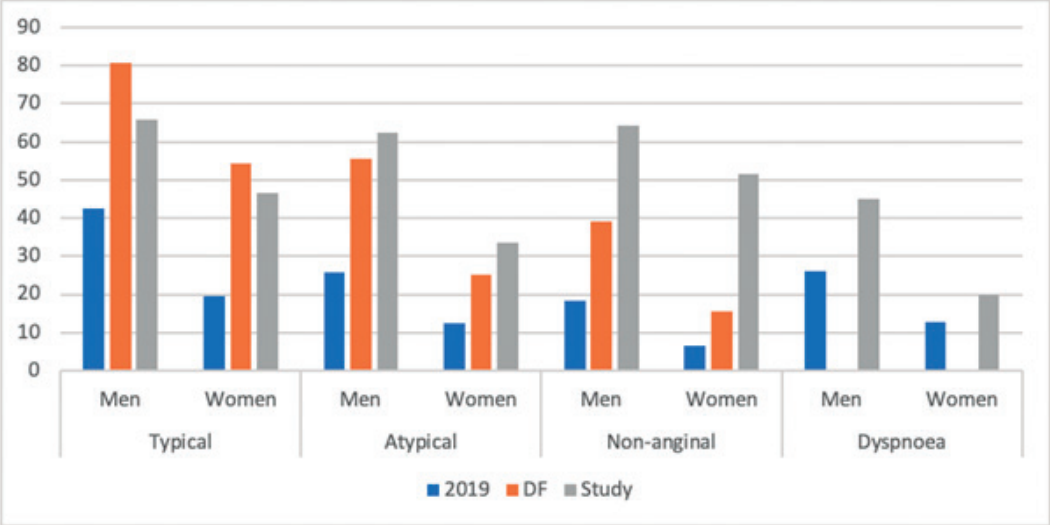
Introduction: Sequential liver transplantation (SLT) uses livers excised from patients with hereditary transthyretin-related amyloidosis during liver transplantation as grafts to other patients with severe hepatic pathologies and a reserved prognosis. The analysis of this highly selected population could help to a better understanding of the transthyretin amyloidosis' pathophysiology.
Objectives: We aimed to investigate the development of cardiac manifestations consistent with iatrogenic transthyretin amyloidosis (iATTR) in patients submitted to SLT.
Methods: We retrospectively analyzed the medical records of 72 consecutive patients submitted to SLT between 2007 and 2010, who received livers with V30M mutation.
Results: Our sample had 79% males and mean age at transplantation was 55 ± 6 years. During a median follow-up time of 80 months 44% patients died. One-year mortality rate after SLT was 7%. Clinical manifestations of iATTR occurred in 29% of individuals, on average 6 years after SLT, and amyloid was identified in 76% of those who underwent biopsy. At baseline, left ventricular hypertrophy (LVH) was identified in 58% of patients. During follow-up, there was a significant increase of the left ventricular wall thickness (11 ± 1 to 13 ± 3 mm; $p < 0.001$) and 61% of patients reached the criteria of de novo LVH or basal LVH worsening. Age (55 ± 5 vs 58 ± 5, $p = 0.25$) and incidence of hypertension (52% vs 64%, $p = 0.365$) were similar between groups but



CO 3 Figure

patients with de novo LVH or basal LVH worsening had higher incidence of chronic kidney disease (CKD; 68% vs 29%, p = 0.02). During follow-up, all-cause death was numerically higher in patients with de novo LVH or worsening LVH but not significantly, probably due to the sample size (23% vs 7%, p = 0.221, log rank test p = 0.262). Significant conduction changes were rarely seen (1 patient); however, there was a trend towards an increase in PR interval. Atrial fibrillation was reported in 8% of cases.
Conclusions: In our sample, probable iATTR was often seen within a decade after SLT. Development of possible infiltrative pattern was more common and conduction disorders were rarer than one would extrapolate from hereditary early onset ATTR V30M patients, suggesting a phenotype more similar to late onset ATTR V30M. Our data suggests that these patients should probably undergo periodic cardiac imaging.

CO 34. HOW TO DISTINGUISH BETWEEN HYPERTROPHIC CARDIOMYOPATHY AND LEFT VENTRICULAR HYPERTROPHY SECONDARY TO FABRY DISEASE?

Raquel Menezes Fernandes[1], Olga Azevedo[2], Filipa Cordeiro[2], Mário Rui Lourenço[2], António Lourenço[2]

[1]Centro Hospitalar do Algarve, EPE/Hospital de Faro. [2]Centro Hospitalar do Alto Ave, EPE/Hospital da Senhora da Oliveira.

Introduction: Fabry disease (FD) commonly leads to left ventricular hypertrophy (LVH) that could mimic sarcomeric hypertrophic cardiomyopathy (HCM).
Objectives: To determine the differences in echocardiographic parameters between FD patients with LVH and HCM patients.
Methods: We conducted a prospective study encompassing FD patients followed in a Reference Center of Lysosomal Storage Disorders. All patients performed a complete echocardiographic evaluation, including left ventricular strain analysis by two-dimensional speckle tracking imaging. Demographic, clinical characteristics and echocardiographic parameters were analysed. FD patients with LVH were compared with HCM patients, using Chi-square test for categorical variables and Student's t-test for continuous variables. The significance level was 0.05.
Results: A total of 91 FD patients were included, with a median age of 51 years-old and 62.6% of female predominance. 16.5% of patients were under enzymatic replacement therapy with agalsidase alpha and 7.7% were treated with chaperone therapy (migalastat). 33 FD patients (36%) had LVH and were older than HCM patients (63.6 vs 59.3 years-old; p = 0.106). FD patients with LVH had lower interventricular septum (IVS) thickness (16.4 vs 19.6 mm, p < 0.001), IVS/posterior wall ratio (1.3 vs 1.8, p < 0.001) and left atrial volume index (34.45 vs 42.2 ml/m2; p = 0.014). Left ventricle mass index was similar between the two groups (157.7 vs 155.5 g/m^2; p = 0.819), with lower left ventricular ejection fraction in FD patients (64.5% vs 70.5%; p < 0.001). There were no significant differences in global longitudinal strain (-15.6% vs 15.9%; p = 0.687), global circumferential strain (-19.9% vs -21.1%; p = 0.218) and global radial strain (35.3% vs 33.7%; p = 0.623). Interestingly, FD patients had lower base-to-apex circumferential strain gradient (5.7% vs 9.1%; p = 0.002) and lower twist (17.5 vs 26.1°°; p = 0.001) than HCM patients. No significant differences were reported regarding mechanical dispersion (72.4 vs 71.2 ms; p = 0.841).
Conclusions: The pattern of LVH is different between FD and HCM patients. In our study, we revealed that base-to-apex circumferential strain gradient and twist are echocardiographic parameters that could help distinguish both entities.

CO 37. [18F]FDG-PET IN CARDIAC SARCOIDOSIS: A SINGLE-CENTRE STUDY IN A SOUTHERN EUROPEAN POPULATION

João Borges Rosa, Manuel Oliveira-Santos, Rodolfo Silva, José Paulo de Almeida, Lino Gonçalves, Gracinda Costa, Maria João Vidigal Ferreira

Centro Hospitalar e Universitário de Coimbra.

Introduction: Cardiac sarcoidosis (CS) is clinically diagnosed in 5% of patients with sarcoidosis and is associated with poor prognosis. However, imaging studies suggest higher prevalence, up to 55%, with worldwide variation. Growing evidence highlights the role of ^{18}F-fluorodeoxyglucose positron emission tomography ([^{18}F]FDG-PET) in non-invasive diagnosis and follow-up. We aimed to evaluate the prevalence and clinical manifestations of CS, diagnosed through [^{18}F]FDG-PET, in a southern European population.
Methods: We retrospectively assessed all patients evaluated with [^{18}F]FDG-PET for sarcoidosis screening between 2009 and 2020, and selected those with a histological diagnosis of extracardiac sarcoidosis. We collected data on clinical manifestations, cardiac magnetic resonance (CMR) results, and mortality outcomes and compared those with and without cardiac involvement. We applied the criteria for the diagnosis of CS from Heart Rhythm Society.
Results: Of the 400 patients screened with [^{18}F]FDG-PET, 128 had a histological diagnosis of extracardiac sarcoidosis (54.7% females, mean age 51.0 ± 14.2 years). None underwent endomyocardial biopsy. Ten patients had a pattern of [^{18}F]FDG uptake consistent with CS defined as diffuse (n = 5), focal (n = 3), and focal on diffuse (n = 2). Of the 128 patients, 14 also underwent CMR, which identified 2 subjects with positive findings in both modalities and 3 additional patients: focal (n = 1), multifocal mid-wall (n = 2), focal mid-wall (n = 2), and multifocal subepicardial (n = 1) delayed gadolinium enhancement. Overall, 13 patients (10.2%) fulfilled the criteria for probable CS (53.8% female, mean age 56.2 ± 12.6 years), all with multiorgan involvement, mostly lung and lymph nodes (each 92%), followed by skin and central nervous system (each 15%). Median left ventricle ejection fraction was 62% [55-65] and there were cardiac manifestations of CS in 6 patients (46%): sick sinus syndrome (n = 2), complete heart block (n = 1), frequent premature ventricular complexes (n = 1), ventricular tachycardia plus heart failure (n = 1), and bifascicular block plus heart failure (n = 1). Eleven patients (85%) with probable CS were medicated with immunosuppressant drugs: corticosteroids (n = 9), methotrexate (n = 4), and azathioprine (n = 2). Four patients with previous [^{18}F]FDG screening were revaluated after treatment, each showing no cardiac uptake. After a mean follow-up of 4.0 ± 1.0 years, mortality was three-fold higher in patients with cardiac involvement, despite the absence of statistical significance (15% vs. 5%, p = 0.151).
Conclusions: In this single-centre study, 10.2% of the patients with proven extracardiac sarcoidosis were diagnosed with CS, of whom 54% were clinically asymptomatic. Cardiac imaging with [^{18}F]FDG-PET plays an important role by improving diagnostic yield and monitoring response to therapy, while CMR is still underused.

CO 38. WHICH ECG FEATURES CAN HELP US DIAGNOSE AMYLOIDOSIS IN PATIENTS WITH RESTRICTIVE AND HYPERTROPHIC HEARTS?

José Lopes de Almeida, M. Ferreira, S. Martinho, MM. Cunha, G. Campos, C. Ferreira, J. Rosa, L. Gonçalves

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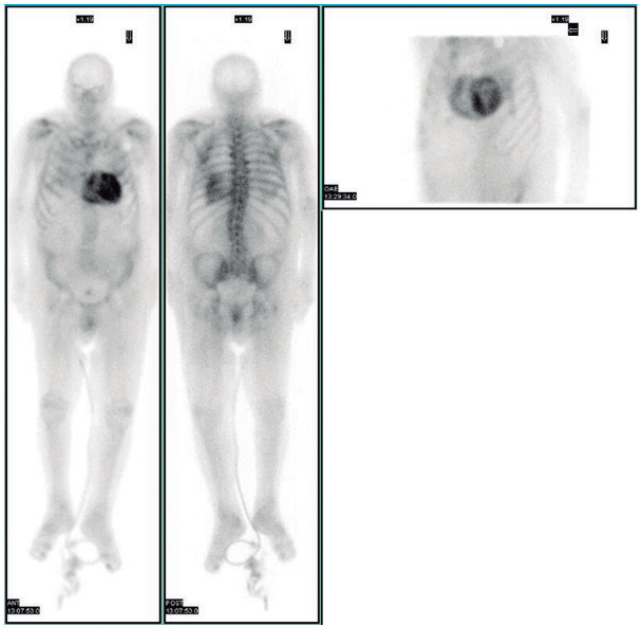
Objectives: ECG patterns suggestive of cardiac amyloidosis (CA) have been described and include low voltage QRS complexes, strain-like repolarization, and AV and interventricular conduction delays. However, these parameters were identified by comparing amyloidosis patients with normal populations, but are shared among other causes of restrictive and hypertrophic cardiopathy. We aimed to evaluate the diagnostic accuracy of various eletrocardiographic (ECG) parameters in a cohort of patients with a high suspicion of CA that went through further testing to either confirm or exclude it.
Methods: The study subjects comprised consecutive patients referred to perform diphosphonate scintigraphy for suspected CA between 2018 and 2021 (n = 76) and with referencing information of either a restrictive or hypertrophic phenotype. The study population was categorized for analysis into 2 groups: patients with proven CA (n = 31) and patients without a final diagnosis of CA after investigation (n = 45). All patients underwent a complete diagnostic work-up including clinical evaluation diphosphonate (DPD) scintigraphy (Figure), blood counts, serum and urine biochemistry, and serum and urine free light chain assay along with immunofixation

electrophoresis. ECG variables potentially predictive of CA from univariable binary logistic regression analyses were selected. Categorical variables were compared between groups using chi-squared test and continuous using student t-test.
Results: 43 patients were referenced to DPD scintigraphy based on an echocardiogram suggestive of a restrictive phenotype and 33 patients suggestive of a hypertrophic phenotype. Among patients with a hypertrophic phenotype, 14 had severe aortic stenosis. The overall prevalence of CA was 41%. 4 patients had AL CA and 31 patients had wild type transthyretin related CA. 16 patients had pacemaker rhythm, 37 had sinus rhythm, 9 1st degree AV block, 9 LBBB, 8 RBBB, 15 left axis deviation, 15 low voltage pattern, 16 any kind of ventricular conduction delay, 13 strain-like repolarization. These were not statistically different between groups. Mean heart rate was 73 bpm ± 16 and mean QRS was 117 ms ± 30 and they were not statistically different between groups. Mean QTc was 445 ms ± 34 and was statistically higher in CA group (mean QTc 458 ± 32 in CA group vs 438 ms ± 32 in non-CA group). QTc was associated with the presence of CA in our binary logistic regression model (χ^2 = 5.2, p = 0.02).



Conclusions: QTc duration on ECG was associated with the presence of CA in a population of patients with echocardiographic suspicion for this diagnosis. This variable has the potential to be added to multi-parametric scores for the diagnosis of CA.

CO 39. ORTHOSTATIC HYPOTENSION IN MUTATED ATTR VAL30MET AMYLOIDOSIS: PREDICTORS AND ASSOCIATED CLINICAL FEATURES

André Frías, Patrícia Rodrigues, Ricardo Costa, Andreia Campinas, Anaisa Pereira, André Alexandre, Hipólito Reis, Severo Torres

Centro Hospitalar do Porto, EPE/Hospital Geral de Santo António.

Introduction: The prevalence of orthostatic hypotension (OH) in patients with mutated transthyretin (TTR) amyloidosis (mATTR) is 40-60%. According to previous studies, OH is frequent and an early feature in patients with Val30Met mutation (the most prevalent form of mATTR).
Objectives: To characterize TTR Val30Met patients with OH and to identify clinical characteristics associated with OH development.
Methods: Retrospective study of consecutive Val30Met TTR patients with suspected cardiac involvement observed at our cardiology clinic during 2019. Two groups were defined: group 1: patients without OH; group 2: patients with OH. Data was obtained by chart review. Statistically significant predictors of OH were found using logistic regression.
Results: We included a total of 248 patients (group 1-173; group 2-75). Group 1 patients were 52% male, median age 45 [interquartile range (IQR) 39-55] and median age at onset 34 (IQR 29.75-46.25) years. Left ventricle hypertrophy [LVH, defined as maximal LV wall thickness (LVT) ≥ 12 mm] occurred in 26.5%, with median maximal LVT 10 mm (IQR 9-12); 49.7% had conduction disturbances, 30.6% gastrointestinal (GI), 17.3% genitourinary (GU) manifestations and 5% were in Coutinho staging ≥ 2/3. Group 2 had 56% male, median age of 49 years at evaluation (IQR 42-65) and 35 years at onset (IQR 30-59). LVH was present in 42.9%, with median maximal LVT 11 mm (IQR 10-14); 74.7% had conduction disturbances, 56% GI and 42.7% GU manifestations and 21% were in Coutinho staging ≥ 2/3. In univariate analysis, higher age (p = 0.005), presence of LVH (p = 0.009), conduction disturbances (p < 0.001), GU manifestations (p < 0.001) and higher Coutinho staging (p < 0.001) were all associated with the presence of OH, while age at onset was not (p = 0.648). In multivariate analysis, only Coutinho staging [odds ratio (OR) 2.609; 95% confidence interval (95%CI) 1.344-5.065] and GU manifestations (OR 3.151; 95%CI 1.595-6.225) were found to be significant predictors of OH.
Conclusions: Our study suggests that OH is more associated with GU manifestations and Neurologic staging, than with amyloid cardiomyopathy or age, suggesting a predominant neurogenic component. The prevalence of OH in our sample of Val30Met patients was lower than previously described.

CO 35. TWIST, LEFT VENTRICULAR LONGITUDINAL AND CIRCUMFERENTIAL STRAIN ARE EARLY MARKERS OF CARDIAC INVOLVEMENT IN FABRY DISEASE

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Introduction: Fabry disease (FD) is an X-linked progressive and multisystemic disease. Cardiac involvement is common and left ventricular hypertrophy (LVH) is the main cardiac manifestation.
Objectives: To determine the differences in echocardiographic parameters between FD patients without LVH and healthy controls.
Methods: We conducted a prospective study encompassing FD patients followed in a Reference Center of Lysosomal Storage Disorders. All patients performed a complete echocardiographic evaluation, including left ventricular strain analysis by two-dimensional speckle tracking imaging. Demographic, clinical characteristics and echocardiographic parameters were analysed. FD patients without LVH were compared with healthy controls, using chi-square test for categorical variables and Student's T-test for continuous variables. The significance level was 0.05.
Results: A total of 91 FD patients were included, with a median age of 51 years-old and 62.6% of female predominance. 16.5% of patients were under enzymatic replacement therapy with agalsidase alpha and 7.7% were treated with chaperone therapy (migalastat). 58 patients (64%) did not present LVH. FD patients without LVH were younger (44.2 vs 52.9 years-old, p < 0.001), had higher interventricular septum thickness (9.3 vs 8.4 mm, p = 0.006) and left ventricular mass index (77.2 vs 68.4 g/m^2, p = 0.003) than healthy controls. Left ventricular ejection fraction was preserved in both groups (63.3% vs 65.4%; p = 0.067). Global longitudinal strain (-19.6% vs -20.9%; p = 0.003) and global circumferential strain (-17.9% vs -20.9%; p < 0.001) were significantly lower in FD patients without LVH compared to healthy controls. Global radial strain was also lower, although without statistical significance (36.4% vs 41.4%, p = 0.058). FD patients without LVH presented a lower base-to-apex circumferential strain gradient (5.7% vs 7.7%; p = 0.035), but a higher base-to-apex longitudinal strain gradient (7.5% vs 4.3%; p < 0.001), compared to controls. Left ventricular twist was also significantly lower in FD patients without LVH (13.8 vs 21.7º, p < 0.001).
Conclusions: Left ventricular strain and twist analysis are useful to identify subclinical myocardial impairment in FD patients without LVH.

Sexta-feira, 30 Abril de 2021 | 10H15-11H15

Sala Virtual 3 | CO 02 - Cardiovascular Nursing

CO 11. ADESÃO AO REGIME TERAPÊUTICO DOS DOENTES SUBMETIDOS A CIRURGIA CARDÍACA - UM ESTUDO RETROSPETIVO

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Centro Hospitalar e Universitário de Coimbra.

Introdução: A adesão ao regime terapêutico é um foco de atenção dos enfermeiros e a não adesão um enorme peso nos gastos com a saúde e um grande impacto na qualidade de vida das pessoas e na economia. A relação de proximidade do enfermeiro com os doentes proporciona uma excelente oportunidade de monitorização da adesão, planeamento e implementação de intervenções que conduzam os doentes a adotar o regime terapêutico eficaz nos seus hábitos diários, dotando-as de conhecimentos e habilidades.
Métodos: Realizou-se um estudo retrospetivo com o objetivo de caracterizar a adesão ao regime terapêutico dos doentes desta unidade de saúde, com dados de utentes submetidos a cirurgia cardíaca entre os anos de 2015 e 2019, recolhidos através de uma base de dados de gestão dos cuidados de Enfermagem. Sendo este tema complexo, na medida em que pode incluir uma grande diversidade de recomendações terapêuticas e de comportamentos, foram seriados os comportamentos considerados mais relevantes e realizada a sua avaliação através de observação direta e/ou entrevista em dois momentos-chave: entre o 4.º dia de pós-operatório e a alta e à data da 1.ª consulta da especialidade.
Resultados/Conclusões: Através deste estudo retrospetivo, a unidade de saúde pôde verificar a evolução demográfica da sua população-alvo. Foi possível constatar a alteração do *status* de diagnóstico nos autocuidados ao longo do internamento até à alta. Foram também detetadas as fragilidades/dificuldades mais comuns ao nível da promoção da adesão ou gestão do regime terapêutico. Após análise destes dados, foram desenvolvidas ações/estratégias formativas na equipa de enfermagem de forma a promover a adesão dos doentes ao regime terapêutico. É disso exemplo o alargamento do período de visita para envolvimento de familiares no regime terapêutico (em época pré-Covid19) ou a criação/adaptação de informação escrita a disponibilizar aos doentes.

CO 7. PREVENÇÃO DA INFEÇÃO DO LOCAL CIRÚRGICO NA IMPLANTAÇÃO DE DISPOSITIVOS CARDÍACOS: CONTRIBUTOS PARA UM CUIDADO DE ENFERMAGEM DE EXCELÊNCIA

Ana Barros[1], Amâncio Carvalho[2], Cristina Imaginário[2]

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Introdução: Os dispositivos cardíacos eletrónicos implantáveis são atualmente o tratamento de primeira linha de arritmias que ameaçam a vida ou de casos de falência cardíaca, assistindo-se a um aumento progressivo de indivíduos portadores desses sistemas. Contudo, a infeção associada ao procedimento cirúrgico é uma das complicações mais temidas. A prevenção da infeção do local cirúrgico assenta atualmente numa prática de cuidados baseada num feixe de intervenções que emerge da evidência científica, mas que nem sempre é cumprido pelos profissionais de saúde.
Objectivos: Analisar o impacto de um programa educacional nos conhecimentos dos enfermeiros da UCIC e Serviço de Cardiologia, de um hospital português da região Norte, acerca do feixe de intervenções de prevenção da infeção do local cirúrgico e no cumprimento deste em procedimentos de implantação de dispositivos cardíacos eletrónicos.
Métodos: Estudo quase-experimental, de desenho antes-após de grupo único, longitudinal e de abordagem quantitativa, com uma amostra de 47 enfermeiros. Foram construídos de raiz dois instrumentos de recolha de dados: um questionário e uma grelha de avaliação de critérios, que foram aplicados antes e após a realização de uma sessão de formação, na qual os enfermeiros foram sensibilizados para o cumprimento do feixe de intervenções em doentes que implantam dispositivos cardíacos eletrónicos.
Resultados: A maioria dos enfermeiros da amostra eram do sexo feminino (74,5%), com idade entre 21 e 44 anos (57,4%), licenciados (91,5%), com cinco ou mais anos de atividade profissional (91,5%) e de experiência na área da Cardiologia (57,4%) e sem formação em prevenção da infeção do local cirúrgico (78,7%). Os participantes possuíam baixos níveis de conhecimento sobre o feixe (23,4% insuficiente e 66,0% suficiente) tendo havido um aumento da pontuação média dos conhecimentos de 10,87 ± 2,028 para 16,64 ± 1,983 após a formação. Igualmente, a pontuação média de cumprimento do feixe de intervenções foi superior após a formação, passando de 49,95 ± 17,74 para 75,81 ± 11,08, aumentando em 4% o número de procedimentos com adesão total ao mesmo.
Conclusões: O programa de formação foi eficaz e teve um impacto positivo, uma vez que se traduziu na aquisição de conhecimentos e em alterações do comportamento dos enfermeiros ao nível da prevenção da infeção do local cirúrgico. Os enfermeiros consciencializaram-se da importância de cumprir este feixe de intervenções nos doentes que implantam dispositivos cardíacos eletrónicos, contudo nem sempre possuem as condições ideais para tal. A educação e o treino dos profissionais de saúde são preponderantes para aumentar a sua adesão às recomendações.

CO 10. BOAS PRÁTICAS DO ENFERMEIRO NA COLHEITA DE AMOSTRAS PARA HEMOCULTURAS NUMA UNIDADE DE CUIDADOS INTENSIVOS CARDÍACOS DE UM CENTRO HOSPITALAR DA ZONA NORTE DE PORTUGAL: O PAPEL DA FORMAÇÃO E DA INTRODUÇÃO DE UM PROCEDIMENTO PADRÃO NA DIMINUIÇÃO DAS TAXAS DE CONTAMINAÇÃO

Ana Rita Pires Olo Machado, Cristina Maria Inocência Imaginário

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introdução: A contaminação de hemoculturas tem um impacto negativo na qualidade dos cuidados de saúde, diminuindo a eficiência e a segurança do atendimento prestado aos doentes, conduzindo à administração de antibióticos desnecessários e à realização de mais exames para identificar o motivo da hemocultura positiva, levando ao aumento do tempo de internamento e dos custos. As taxas de contaminação variam entre 0,6% a 12,5%, sendo o objetivo mantê-las abaixo dos 3%. A taxa de contaminação de hemoculturas da UCIC no ano de 2020 foi de 8,8%. Estudos demonstram que é na fase pré-analítica que a maioria dos erros ocorre e que são vários os fatores que contribuem para a contaminação das amostras, tornando-se necessária uma abordagem que englobe a mudança de mais do que uma prática, sendo crucial uma intervenção de enfermagem norteada pela melhor evidência científica.
Métodos: A intervenção realizada incluiu: i) a realização de uma sessão de formação em serviço através da plataforma Zoom onde se apresentaram os dados estatísticos sobre a contaminação de hemoculturas da UCIC, uma revisão da literatura sobre as boas práticas na colheita de amostras para hemoculturas e uma proposta de procedimento padrão de colheita; ii) a implementação de um procedimento padrão que inclui: a utilização de um kit de colheita, a higienização das mãos, a punção venosa direta, a desinfecção do local de punção com solução alcoólica de clorexidina a 2%, a utilização de um campo cirúrgico, o uso de luvas esterilizadas, a colheita do volume de sangue indicado nos frascos de hemoculturas, a rejeição de 0.5ml do sangue colhido, a priorização do frasco de aeróbios, a utilização do sangue obtido de uma punção apenas para um conjunto de frascos e o preenchimento de um checklist no final da colheita.
Resultados: Espera-se diminuir a taxa de contaminação das hemoculturas colhidas na UCIC para valores inferiores a 3% até ao final do ano de 2021.
Conclusões: A avaliação do impacto da intervenção será realizada através do cálculo da taxa de contaminação. O preenchimento do checklist do procedimento permitirá averiguar a adesão ao procedimento padrão implementado. O estudo avaliará o efeito da intervenção realizada no seu

global e não o de cada elemento da intervenção separadamente, não sendo possível perceber se o conjunto dos elementos que compõem a intervenção é mais eficaz do que cada elemento sozinho. Para além disso, o estudo será realizado em apenas um serviço, pelo que os resultados obtidos não poderão ser extrapolados. Por último, as características dos doentes constituem também um fator enviesador dos dados, uma vez que não serão analisadas. No entanto, as características dos doentes não são consideradas um fator *major* na contaminação de hemoculturas.

CO 6. INDICADORES DE ENFERMAGEM SENSÍVEIS AOS CUIDADOS DE ENFERMAGEM DE REABILITAÇÃO EM CARDIOLOGIA-EXPERIÊNCIA DE UM CENTRO

Patrícia Silva, Joana Antunes, Raúl Pinto, Ana Carina Ferreira, Cristiana Teles, Licinia Aguiar, Cátia Ferreira

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introdução: Os cuidados de Enfermagem de Reabilitação (ER) constituem uma área de intervenção especializada que contribui para a obtenção de ganhos em saúde. Como forma de monitorizar esses ganhos sensíveis aos cuidados de ER, é necessária a definição de indicadores, sustentada na Classificação para a Prática de Enfermagem e compatíveis com o sistema de informação utilizado para os registos de Enfermagem. Atendendo à especificidade e importância da prevenção de complicações nos doentes com patologia cardíaca, a equipa de enfermeiros especialista em ER considerou pertinente definir como indicador a gestão de regime terapêutico (GRT).
Métodos: Avaliar a GRT antes e após a intervenção da ER, no período de junho a setembro de 2020, após a criação de um algoritmo de registo sobre a GRT.
Objectivos: Aumentar a taxa de resolução do conhecimento de GRT-medicamentoso, dietético e exercício no serviço de Cardiologia em 50%.
Resultados: Verificámos que antes da intervenção da ER, de janeiro a dezembro de 2019, foi identificado a gestão do regime terapêutico a 18 doentes, com ganhos 0. No período de junho a setembro 2020 foram seguidos pela equipa de ER 121 doentes. A 81 foi identificado o diagnóstico de potencial para melhoria do conhecimento na GRT medicamentoso, dietético e exercício, o que equivale a 66.9% da amostra. Verificamos uma taxa de resolução quanto ao conhecimento sobre regime medicamentoso de 69,1%, no conhecimento sobre regime dietético de 70,4% e no conhecimento sobre o regime de exercício de 74,1%.
Conclusões: Ao tentarmos dar resposta à questão inicialmente formulada sobre que indicadores sensíveis aos cuidados de ER surgem na análise dos registos do SClínico, percebemos que embora consigamos mostrar os ganhos do programa implementado em termos melhoria dos indicadores GRT, ainda é longo o caminho a percorrer e o trabalho a desenvolver em matéria de indicadores de ER em Cardiologia.

CO 8. MOMENTO DE EXERCÍCIOS DE ALONGAMENTO - SATISFAÇÃO DOS PROFISSIONAIS DE SAÚDE

Ana Ferreira, Sónia Ferreira, Patrícia Silva, Joana Antunes, Licinia Aguiar, Raúl Pinto, Cristiana Teles

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Os alongamentos são exercícios que previnem a lesão das fibras musculares e, consequentemente, conduzem ao aumento da flexibilidade. Por sua vez, quanto maior a flexibilidade maior a amplitude de movimento possível de uma determinada articulação (Ferreira, Henriques, Amaro, & Morouço, 2015). O enfermeiro especialista em Enfermagem de Reabilitação (EEER), ocupa uma posição crucial na promoção da saúde e bem-estar, incentivando a adoção de estilos de vida saudáveis e mudança de comportamentos, e concebe programas de exercício com vista à promoção da saúde e prevenção de lesões. Assim, foi implementada a prática de um momento de exercícios de alongamento (MEA) num serviço de Cardiologia, tendo por base estudos e orientações que têm demonstrado vantagens à sua implementação no local de trabalho, como a diminuição da incidência de lesões músculo-esqueléticas nos profissionais, promoção do relaxamento muscular, correção da postura corporal, consciência corporal, redução do nível de ansiedade e *stress*, melhoria na autoestima e qualidade de vida em qualquer faixa etária (Silva & Mocarzel, 2019), (Jesus, 2018), bem como o aumento da satisfação e motivação dos trabalhadores (Ferreira, 2015), (Moura, 2019). O MEA, orientado pelo EEER e direcionado para toda a equipa multidisciplinar, teve início a 4 de novembro de 2019 e acontece de segunda a sexta-feira no início do turno da manhã, com a duração de 3 a 7 minutos, acompanhado por música. Decorridos seis meses após o início desta prática, pedimos à equipa que nos desse o seu *feedback* relativamente a esta temática, através do auto-preenchimento de um questionário. Foi constituída uma amostra de 25 profissionais, obtendo-se uma taxa de amostragem de aproximadamente 45% da população em estudo. Os profissionais do serviço reconhecem a importância do MEA e, na generalidade, mostram-se satisfeitos pela sua implementação, pelos seus objetivos, horário e tipologia. Estes resultados demonstram o quanto a intervenção do EEER juntos das equipas profissionais pode ser de grande importância, com o intuito de minimizar as lesões músculo-esqueléticas, maximizar efeitos sobre o bem-estar físico e emocional e contribuir para a melhoria da satisfação profissional.

Sexta-feira, 30 Abril de 2021 | 10H15-11H30

Sala Virtual 1 | CO 26 - Populações especiais

CO 139. OI&HEART STUDY: CARDIOVASCULAR PROFILE OF PORTUGUESE PATIENTS WITH OSTEOGENESIS IMPERFECTA

Andreia Magalhães[1], Céu Barreiros[1], Mónica Rebelo[1], Patrícia Dias[1], André Travessa[1], Afonso Nunes Ferreira[1], Ana G. Almeida[1], Susana Gonçalves[1], Laura Santos[1], Isabel m. Pinho[1], Irina Neves[1], Ana Paixão[1], Fernando Ribeiro[1], Fátima Godinho[2], Fausto J. Pinto[1]

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[2]Associação Portuguesa de Osteogénese Imperfeita.

Introduction: Osteogenesis imperfecta (OI) is a rare inherited disorder which involves the connective tissue. Mutations in type 1 procollagen genes (COL1A1, COL1A2) are the most common pathogenesis of OI. Although it´s main clinical features are related to bone tissue and fragility, other extra-skeletal manifestation can be present. Collagen type 1 is an important constituent of different parts of the cardiovascular system, however the prevalence of cardiac disorders in this population is still unknown.
Objectives: We aimed to identify and evaluate the presence of potential subclinical cardiac disorders in OI, to better understand the risk of heart disorders in this population.
Methods: Prospective study of 64 patients (pts) with clinical confirmed OI diagnosis that were divided in two groups: G1 - Children (0-18 years) and G2 - Adults (>18 years). Pts were evaluated according to a specific protocol, designed to identify clinical, anatomical and electrical abnormalities: clinical assessment, ECG, transthoracic echocardiogram with speckle-tracking analysis, 24h Holter monitoring and 24h ambulatory blood pressure monitoring. The adult pts repeated this assessment a year later.
Results: Sixteen children were included (50% male, age range 4 to 17 years). In this group clinically OI was classified as: mild 88%, moderate 6% and severe 6%. Gene mutation in COL1A1 56%, COL1A2 6%, SERPINF1 6% were present. 6% had type I obesity identified as cardiovascular (CV) risk factor and no concomitant cardiac pathologies were identified. In the adult group 48 pts were evaluated, 74% female, mean age 42 years. Clinically OI was classified as: mild 58%, moderate 29% and severe 13%. The majority of pts had gene mutation in COL1A1 69%. The most frequent symptom reported was palpitations (26%). CV risk factors were present in 47% of

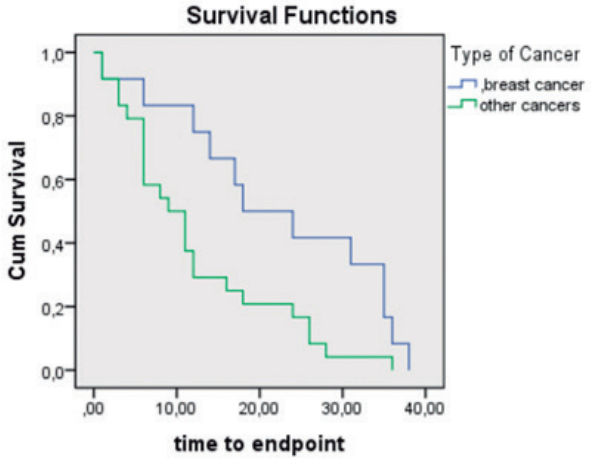
pts, specially obesity (39%) and hypertension (30%). In 43% of ABPM was detected hypertension, and 6% of Holter monitoring showed moderated findings (supraventricular tachycardia and idioventricular rhythm). The echocardiogram identified left atrial enlargement in 28% of pts and aortic dilatation in 22% of pts. Mitral regurgitation was detected in 15 pts, with 2 of them showing moderate regurgitation. A reduced global longitudinal strain was found in 5 pts and 2 had reduced left ventricle ejection fraction. No significant differences were found in the evaluation carried out in the following year. In 5 pts extra visits were performed mainly to introduce antihypertensive therapy and to investigate pts with reduced left ventricle ejection fraction.
Conclusions: OI pts seem to have CV system involvement, specially aortic and mitral valve abnormalities and these are evident only in the adult population. This study is the first prospective study addressing the global impact of this disease in CV system and intends to assess the evolution of these changes in a longer follow-up.

CO 135. MORBIDITY AND MORTALITY IN CARDIO-ONCOLOGY CLINIC PATIENTS-WHO'S THE GUILTY ONE: IS IT THE HEART, THE CANCER OR THE PATIENT?

Mariana Saraiva, Nuno Craveiro, Ana Rita Moura, Bruno Castilho, Ana Rita Veiga, Isabel Monteiro, Luz Pitta, Vítor Martins

Hospital Distrital de Santarém, EPE.

Introduction: The purpose of cardio-oncology (CO) is to prevent and treat cardiovascular (CV) comorbidities in cancer patients (pts), improving quality of life and survival. Nevertheless, despite both oncology and cardiology efforts, an important burden of disease still lingers, with multiple hospital admissions, for CV and non-CV causes, and high mortality. A deeper knowledge of this population might help improve these pts' follow-up and prognosis.
Objectives: Evaluate the prognosis of pts under CO surveillance and find predictors of adverse prognosis.
Methods: Retrospective study of a population followed in CO consultation. Primary endpoint: hospital admission for CV and non-CV causes or death during follow-up. Statistical analysis of demographic, clinical, echocardiographic, laboratorial data was made.



Results: We included 78 patients, mean age 66.08 ± 1.16 years, 59% female, with mean follow-up of 19.9 ± 16.7 months. About half (51.3%) had breast cancer, followed by gastrointestinal tract (19.2%) and haematological (9%) malignancies, with a significant proportion with advanced disease (38.5% were metastatic). Prevalence of CV risk factors was high (hypertension in 74.4%, dyslipidaemia in 44.9%, type 2 diabetes mellitus in 19.2%), but also coronary artery disease (CAD) (23.1%) and atrial fibrillation (AF) (19.2%). A diagnosis of cardiotoxicity was made in 19.2%, mainly in the form of left ventricular systolic dysfunction. At baseline, 16.7% of patients had a left ventricular ejection fraction (LVEF) under 50% and 37.7% a reduced global longitudinal strain (GLS). All of them were treated with different types of chemotherapy and 49.4% of pts with radiotherapy. The overall mortality rate during follow-up was 21.8% and 46.2% of pts had ≥ 1 hospital admission. The same proportion (46.2%) of patients reached the endpoint, mostly male pts (p = 0.001), with metastatic disease (p = 0.001), receiving radiotherapy (p = 0.039). Moreover, hypertension (p = 0.046), CAD (p = 0.047), AF (p = 0.019), lower baseline LVEF (p = 0.001) and GLS (p = 0.004) increased the likelihood of reaching the endpoint. These pts also had more frequent consultations (p = 0.024). There was no difference regarding the diagnosis of cardiotoxicity (p = 0.076) or measurement of cardiac biomarkers. Pts with breast cancer were significantly less likely to have an adverse event (p = 0.003) and had longer time to endpoint (breast cancer 22.25 ± 3.67 months vs other than breast cancers 12.08 ± 1.95 months, p = 0.016). After multivariate regression analysis, male gender (p = 0.046), metastatic disease (p = 0.049), AF (p = 0.047), baseline LVEF (p = 0.017) and more frequent consultations (p = 0.007) remained independent predictors of the outcome.
Conclusions: in this complex population, multiple factors contribute to an adverse prognosis, either related to the patient, the cancer or to CV disease, suggesting benefit from a holistic approach.

CO 136. THE 90S ARE THE NEW 70S: APPROACH TO NONAGENARIAN PATIENTS WITH MYOCARDIAL INFARCTION: DATA FROM THE REAL WORLD REGISTRY ON ACUTE CORONARY SYNDROMES

João Grade, Alexandra Briosa, Ana Rita Pereira, Ana Marques, Sofia Alegria, Daniel Sebaiti, Ana Catarina Gomes, Inês Rangel, Gonçalo Morgado, Rita Calé, Cristina Martins, Hélder Pereira, em Nome Dos Investigadores do Registo Nacional de Síndromes Coronárias Agudas

Hospital Garcia de Orta, EPE.

Introduction: The approach to Acute Coronary Syndromes is based on robust high quality evidence, currently systematized in European endorsed guidelines. However most trials that support such guidelines excluded or included a small percentage of the very elderly and the clinical decision in this age range is subjected to high interpersonal and inter-hospital variability.
Objectives: Our aim was to assess the approach to nonagenarian patients with Acute Coronary Syndromes (ACS), in what regards the choice of percutaneous coronary intervention or conservative management and determine in-hospital and at 1 year outcomes.
Methods: We performed a 9 year retrospective analysis of all patients with age equal or greater than ninety (90) admitted with ACS in Portugal. Medical records were analysed for demographic, procedural data and outcomes.
Results: 714 nonagenarian patients were admitted with ACS, which corresponded to 2.4% of the total cohort. The mean age was 92 ± 2 with a female preponderance (58.7%). There was a high rate of cardiovascular risk factor with hypertension in 81.3%; Dyslipidemia in 46.1% Diabetes Mellitus in 23.4%; and other comorbidities with 21% of prior ACS, 14.4% with Heart Failure and 11% with cerebrovascular events. The ACS was categorized as ST elevation Myocardial Infarction (STEMI) in 43.9%, non- STEMI (NSTEMI) in 45.8%, and unstable angina (UA) in 2%. 268 patients, 37.8% of the cohort, were submitted to percutaneous coronary intervention (PCI), mainly due to STEMI (68.3%). This cohort were composed of patients with less comorbidities (statistically significant less valvular heart disease, heart failure, peripherical artery disease and dementia although more oncological diseases). There was no difference in the severity of ACS, as categorized by the Kilip Kimbal (KK) classification, mechanical complication or depressed ejection fraction between the 2 groups. (p > 0.05 for all). There was a statistically significant increase of advanced atrioventricular block (AAB) (10.6 vs 4.4%; p 0.002; Logistic regression OR 3.12; IC95 [1.37-7.15], p 0.007) and major bleeding (1.8 vs 5.5%; p 0.008; Logistic regression OR 3.36; IC95 [1.36-8.32] p 0.009) in the PCI group. There was no difference in in-hospital re-infarction, cardiac arrest, stroke or death. (p > 0.05 for all). The follow up at 1 year was performed in two hundred and fifty-six (256) patients, 30.9% submitted to PCI. Although the survival analysis demonstrated a trend towards improvement in 1-year survival and cardiovascular readmissions in the intervention group, it did not reach statistical significance. (p>0.05 for all).

Conclusions: PCI was performed in about a third of nonagenarians presenting with ACS. Our cohort demonstrated a greater rate of in-hospital complications without a significant in-hospital or at 1 year clinical benefit.

CO 137. MYOCARDIAL WORK BRINGS A NEW INSIGHT INTO LEFT VENTRICULE REMODELLING IN CARDIOONCOLOGY PATIENTS

Vera Ferreira, Madalena Coutinho Cruz, Luísa Moura Branco, Ana Galrinho, Ana Teresa Timóteo, Pedro Rio, Luís Almeida Morais, Silvia Aguiar Rosa, Ana Leal, Sónia Oliveira, Alexandra Castelo, Pedro Garcia Brás, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Serial echocardiographic assessment of 2D left ventricular ejection fraction (LVEF) and global longitudinal strain (GLS) is the gold standard screening method for cancer therapeutics-related cardiac dysfunction (CTRCD). Non-invasive left ventricular (LV) pressure-strain loop (PSL) provides a novel method of quantifying myocardial work (MW) with potential advantages, as it incorporates measurements of myocardial deformation and LV pressure.
Objectives: To evaluate the impact of cardiotoxic treatments in MW indices.
Methods: Prospective study of female breast cancer patients (P) submitted to therapy (TH) who underwent serial monitoring by 2D, 3D transthoracic echocardiography (TTE) and concomitant blood pressure assessment. P were evaluated at T0, T1 and T2 (before, ≥ 6 and ≥ 12 months after starting TH). PSL analysis allowed the calculation of the following indices: Global Work Index (GWI), Global Constructive Work (GCW), Global Work Waste (GWW) and Global Work Efficiency (GWE). CTRCD was defined as an absolute decrease in 2D LVEF > 10% to a value < 54% or a relative decrease in 2D GLS > 15%, according to literature.
Results: 122 patients (mean age 54.7 ± 12.0 years), mostly treated with anthracyclines (77.0%, cumulative dose 268.6 ± 71.8 mg/m^2), anti-HER (75.4%) and radiotherapy (77.0%) were included. 2D and 3D LVEF were significantly reduced during TH, however remaining within the limits of normality (2D LVEF T0-T1 64.2 ± 7.6 vs 61.1 ± 8.2%, p = 0.006 and 3D LVEF T0-T1 60.2 ± 6.7 vs 56.9 ± 6.3%, p = 0.022). 2D GLS was also more impaired at T1 (-19.8 ± 2.7% vs -18.5 ± 3.0%, p = 0.003). All MW indices were significantly reduced at T1 compared to baseline (GWI 1756.9 ± 319.2 vs 1614.3 ± 338.5 mmHg%, p = 0.005; GCW 2105.6 ± 352.0 vs 1970.5 ± 376.2 mmHg %, p = 0.015; GWW 121.1 ± 66.6 vs 161.1 ± 84.1 mmHg %, p = 0.001; GWE 93.5 ± 3.1 vs 91.1 ± 4.5%, p = 0.001). Between T1 and T2 no statistical difference was found but a partial recovery of parameters was observed when comparing T2 to T0 (GWI (T2) 1,650.6 ± 357.5 mmHg%, p = 0.035; GCW (T2) 2,013.3 ± 379.3 mmHg%, p = 0.086; GWW (T2) 148.0 ± 85.0 mmHg%, p = 0.02 and GWE (T2) 92.0 ± 4.7%, p = 0.012). During a mean follow-up of 14.9 ± 9.3 months, 36 patients (29.5%) developed CTRCD. P presenting CTRCD revealed a significant decrease in GWI and GWE at T1 comparing with women without CTRCD (GWI 1.8 ± 21.6 vs -14.2 ± 18.5%, p = 0.004 and GWE -1.0 ± 3.0 vs -3.6 ± 3.9%, p = 0.005). GWW had a substantially increase at T1 in P with cardiotoxicity (27.6 ± 76.3% vs 64.1 ± 68.0%, p = 0.051).
Conclusions: Left ventricular systolic function study with MW showed a reduction in cardiac performance with a peak at 6 months from the start of chemotherapy and partial recovery after term. Assessment of myocardial deformation parameters, namely MW, proved to be a useful tool for a better characterisation of cardiac remodelling, and could enhance patient selection for cardioprotective therapeutics.

CO 140. PREVENTIVE ROLE OF CARDIOPROTECTIVE DRUGS IN HER2 POSITIVE BREAST CANCER

Miguel Martins de Carvalho, Ricardo Alves Pinto, Tânia Proença, Inês Costa, Sofia Torres, Carlos Xavier Resende, Pedro Diogo Grilo, Ana Filipa Amador, Catarina Martins da Costa, João Calvão, Carla de Sousa, Mariana Paiva, Filipe Macedo

Centro Hospitalar de S. João, EPE.

Introduction: In patients with breast cancer, anti-HER2-targeted therapies (AHT) are highly associated with cardiotoxicity (CT), being the main reason for treatment interruption in patients receiving adjuvant trastuzumab. Guidelines recommend regular left ventricular ejection fraction (LVEF) assessments and CT's management with cardioprotective drugs (CPD). However, while secondary prevention has already entered clinical practice, despite persistent unresolved questions, primary prevention is still in the research domain. Our aim was to evaluate risk of CT and the role of CPD in a subset of breast cancer patients treated with AHT.
Methods: We retrospectively analyzed a population of breast cancer female patients treated with AHT referred to Cardio-oncology consultation at a tertiary center from January 2017 to November 2019. All patients were evaluated with echocardiogram before treatment initiation and at least at 3, 6, 9 and 12-months. CT was defined as LVEF under 50% or decline of at least 10% in LVEF during follow-up. As CPD we considered renin-angiotensin-aldosterone system inhibitors and beta-blockers.
Results: A total of 74 patients were included with mean age of 52.9 ± 10 year-old. Concerning cardiovascular risk factors (CVRF) 12.2% had diabetes, 33.8% dyslipidaemia, 29.7% hypertension and 23.0% were smokers or previous smokers; most patients had a high or very-high CT risk score (98.6% with score ≥ 5). Besides AHT, 66.2% and 82.2% were also on anthracyclines and radiotherapy, respectively. Patients were followed for a median follow-up of 17 months. At baseline, mean high sensitivity troponin I (hs-cTnI) was 4.1 ng/L and mean LVEF was 63.4%, with all patients with normal cardiac function. During follow-up, 18.9% of patient developed CT with a higher prevalence in patients concomitantly on anthracyclines (24.5% vs 8%, p = 0.087). CPD was initiated or titrated in 85.7% of patients and 28.6% needed to suspend AHT; overall 92.9% of CT patients recovered. When comparing patients already medicated with CPD before cancer treatment (41.9%) to those naïve of CPD, the first group present a significative lower incidence of CT [6.5% vs 27.9%, p = 0.020, OR = 0.18 (95%CI 0.04-0.87)]. When analysed all sample (with or without CT), patients already on CPD also presented a higher LVEF at 12 months follow-up (62.0% vs 59.1%, t(55) = -2.4, p = 0.018), despite of similar LVEF at baseline (62.8% vs 63.8%, p = 0.292). Medication with statins before chemotherapy did not reduce the risk of CT.
Conclusions: Patients submitted to AHT had higher risk of developing CT, especially when concomitantly on anthracyclines therapy. Pre-treatment

TTE Variable	T0	T1	T2	p-value (T0 vs T1)	p-value (T1 vs T2)	p-value (T0 vs T2)
2D LAEDV (ml)	44.4±14.8	50.3±14.1	48.6±15.1	**0.007**	0.424	**0.049**
2D LVEDV (ml)	75.1±19.0	82.9±20.2	78.9±18.6	**0.005**	0.122	0.137
2D LVESV (ml)	27.0±10.0	32.5±12.2	30.5±11.2	**0.001**	0.204	**0.019**
2D LVEF (%)	64.2±7.6	61.1±8.2	61.6±8.0	**0.006**	0.656	**0.016**
2D GLS (%)	-19.8±2.7	-18.5±3.0	-18.7±3.1	**0.003**	0.686	**0.012**
3D LVEF (%)	60.2±6.7	56.9±6.3	58.7±5.5	**0.022**	0.166	0.271
3D LVEDV (ml)	81.8±18.5	91.4±18.8	84,2±18.8	**0.017**	0.079	0.545
3D LVESV (ml)	32.8±10.6	39.8±11.7	34.9±9.8	**0.005**	**0.046**	0.332
GWI	1756.9±319.2	1614.3±338.5	1650.6±357.5	**0.005**	0.465	**0.035**
GCW	2105.6±352.0	1970.5±376.2	2013.3±379.3	**0.015**	0.427	0.086
GWW	121.1±66.6	161.1±84.1	148.0±85.0	**0.001**	0.281	**0.02**
GWE	93.5±3.1	91.1±4.5	92.0±4.7	**0.001**	0.171	**0.012**

CO 137 Figure

with CPD was significantly associated with a lower prevalence of CT and a higher LVEF at 12-months follow-up. These results highlight the importance of cardiac evaluation in HER2+ patients and strengthen the value of primary prevention in these patients.

CO 138. DEXRAZOXANE ROLE IN THE PREVENTION OF ANTHRACYCLINE CARDIOTOXICITY IN CHILDREN WITH ACUTE LEUKEMIA: A META-ANALYSIS

José Pedro Sousa[1], Luís Puga[1], João Gameiro Lopes[1], Ana Rita Gomes[2], Carolina Saleiro[1], Diana de Campos[2], Carolina Lourenço[1], Lino Gonçalves[3]

[1]Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral. [2]Centro Hospitalar e Universitário de Coimbra. [3]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: Anthracyclines have played a central role in improving the overall survival of acute leukemia patients. However, cardiotoxic side effects limit its net benefit. Dexrazoxane has been proved cardioprotective in the setting of low-dose anthracycline exposure, but its value in children, who are expected to receive high cumulative dosages, remains elusive.
Objectives: To perform a meta-analysis intended to appraise the efficacy and safety of dexrazoxane in pediatric acute leukemia patients managed with anthracycline chemotherapy.
Methods: We systematically searched MEDLINE, Embase, Web of Science, Cochrane Central and Google Scholar databases, using the terms "leukemia", "anthracycline" and "dexrazoxane", from inception to June 21st, 2020. Studies targeting cardiac events, subclinical cardiotoxicity, primary cancer progression or relapse, secondary malignancy, drug-associated adverse effects and mortality were included. The primary endpoint was a composite of incidental heart failure, left ventricular systolic function deterioration, significant ventricular arrhythmias and cardiovascular (CV) mortality. Investigational arms were those of dexrazoxane and no drug or placebo. A random-effects model with Mantel-Haenszel method was performed to calculate pooled ORs.
Results: We encompassed 9 studies, of which 6 were prospective, including 5 randomized controlled trials (RCTs), albeit from only 2 databases. 5 studies focused on pediatric acute lymphoblastic leukemia patients, while 3 addressed children with acute myeloid leukemia, with 1 study covering both patient populations. Doxorubicin was the most represented anthracycline. 2,375 patients were included, of whom 838 were under dexrazoxane. There were 47 primary endpoint events, including 6 CV deaths. Additionally, 177 failed primary cancer responses to treatment, 19 secondary malignant neoplasms and 63 chemotherapy-related deaths were reported. Dexrazoxane was found to numerically reduce both the primary endpoint (5 studies, OR 0.29, 95%CI 0.08-1.03, p 0.06, i^2 0%) and CV mortality (3 studies, OR 0.47, 95%CI 0.04-5.46, p 0.55, i^2 0%) and to significantly decrease subclinical cardiotoxicity, assessed as serum cardiac troponin T elevation (2 studies, OR 0.19, 95%CI 0.1-0.35, p < 0.00001, i^2 0%). Primary cancer outcome and the risk of secondary malignancy did not differ significantly between the 2 arms (3 studies, OR 0.84, 95%CI 0.59-1.18, p 0.3, i^2 0% and 5 studies, OR 1.98, 95%CI 0.74-5.33, p 0.18, i^2 0%, respectively). Likewise, severe mucositis and chemotherapy-related mortality were similar in both groups (2 studies, OR 0.97, 95%CI 0.29-3.22, p 0.96, i^2 82%, and 4 studies, OR 1.15, 95%CI 0.57-2.31, p 0.7, i^2 0%, respectively).
Conclusions: Dexrazoxane seems to maintain its cardioprotective properties and its ability not to deteriorate major cancer outcomes in pediatric acute leukemia patients.

Sexta-feira, 30 Abril de 2021 | 09H00-10H15

Sala Virtual 2 | CO 03 - Flutter/atrial fibrilation

CO 13. A NEW APPROACH TO ATRIAL FLUTTER ABLATION USING FUNCTIONAL SUBSTRATE MAPPING WITH WAVEFRONT DISCONTINUITY DURING SINUS RHYTHM

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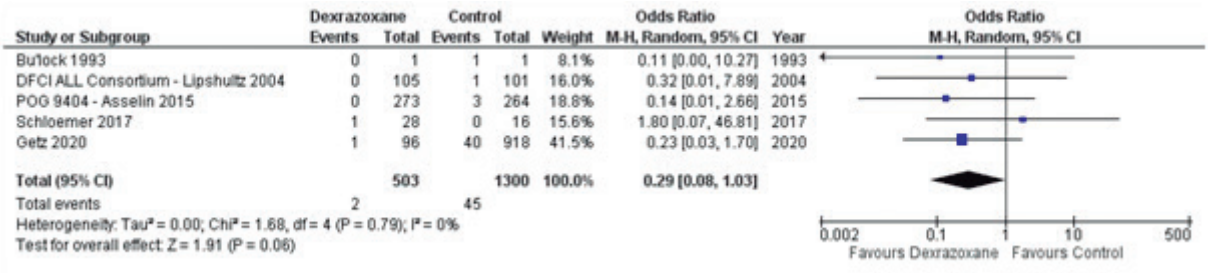
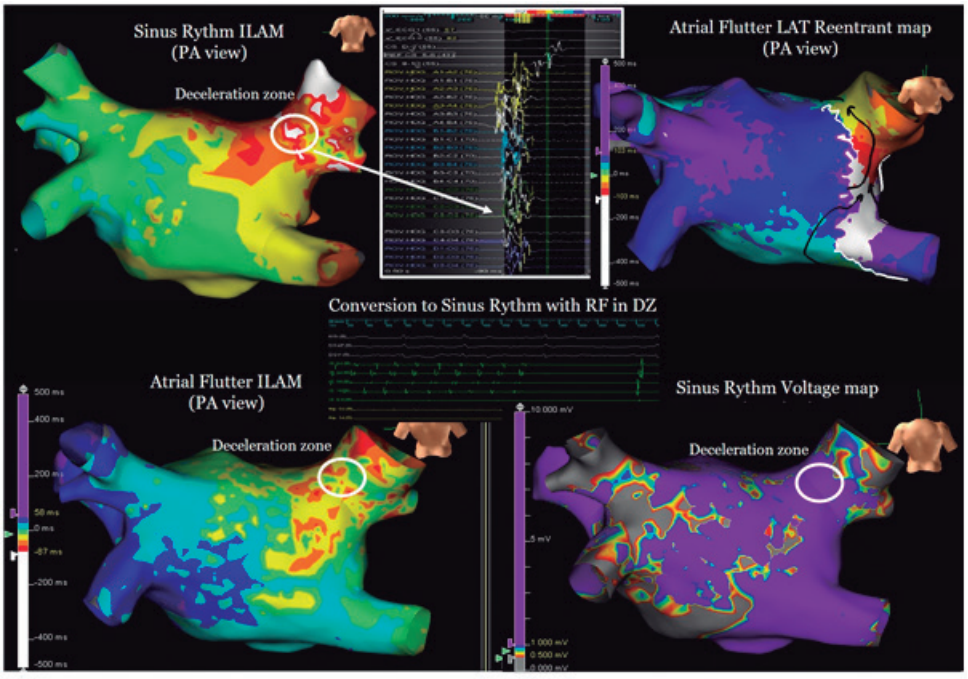
[1]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [2]Outro.

Introduction: Ultra high-density (UHD) mapping allows accurate identification of local abnormal electrograms and low voltage within a small area range, allowing precise identification of reentry circuits. Areas with high isochronal density in a small area known as deceleration zones (DZ) are responsible for reentry.
Objectives: Identify the DZ and areas of low voltage in sinus rhythm (SR) and evaluate the feasibility of performing atrial flutter (AFL) ablation by targeting those zones.
Methods: We prospectively enrolled patients in SR referred for AFL ablation (either typical or atypical). An isochronal late activation mapping (ILAM) during SR with UHD catheter was performed, annotating latest deflection of local electrograms. DZ were defined as areas with > 3 isochrones within 1cm radius, prioritizing zones with maximal density. Atrial flutter was then induced and ILAM during flutter was performed for comparison. Voltage mapping was also assessed (0.1-0.5 mV). Ablation targeted DZ in SR that displayed the higher voltage. DZ in SR were compared to DZ in AFL. Radiofrequency (RF) applications needed to terminate AFL were assessed. After AFL termination, complete line of the slow conduction zone was completed, and pulmonary vein isolation (PVI) was done in case of left AFL. Categorical variables are presented in absolute and relative values and median and interquartile range were used for numerical variables, as well t-Student test for correlation of numerical variables.
Results: We studied 6 AFL (4 atypical, 66.7%) in 5 patients, 2 male (40%), median age 70 (64-72). UHD ILAM in SR with 2,195 points (1,212-2,865) and 2,197 points (1,356-3,102) in AFL (p = 0.62). The UHD ILAM identified a median of 1 (1-1.75) DZ in SR, that colocalized with AFL isthmus and DZ in AFL in 100%. DZ were not always located in low voltage areas. Aiming at the higher voltage in the DZ terminated the AFL in all cases, with a median RF time of 38 (25-58) seconds and AFL was no longer inducible. However, according to protocol, the complete line of slow conduction zone was done, with a median RF time of 1,049.5 (274-1194) seconds (p = 0.009).



CO 138 Figure



CO 13 Figure

Conclusions: Isochronal mapping in sinus rhythm with UHD catheters can display the functional substrate for reentry in AFL, allowing a substrate guided ablation in case of non-inducible AFL. Targeting the areas of high isochronal density, is effective in terminating AFL, obviating the need for extensive ablation.

CO 14. RADIOFREQUENCY CATHETER ABLATION FOR PERSISTENT ATRIAL FIBRILLATION

André Azul Freitas[1], Pedro A. Sousa[1], Cátia Ferreira[1], José Paulo Almeida[1], Sofia Martinho[1], Valdirene Gonçalves[2], João Rosa[1], Gustavo Campos[1], Natália António[1], Luís Elvas[1], Lino Gonçalves[1]

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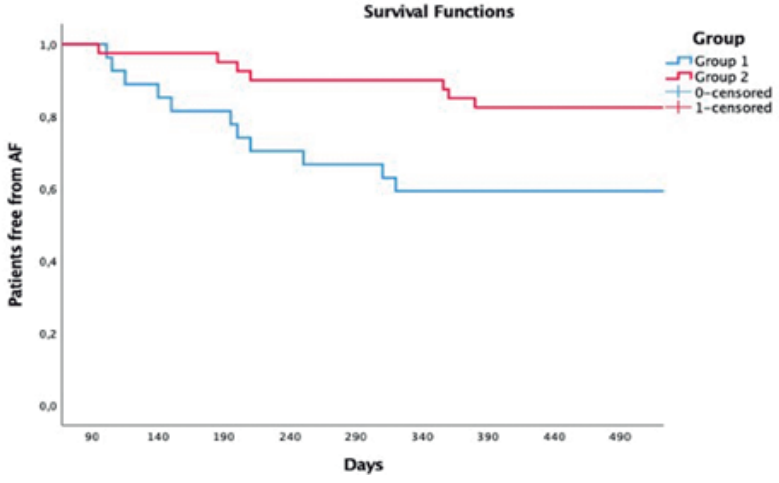
Introduction: Catheter ablation has become the first-line treatment for symptomatic patients with atrial fibrillation (AF). Several approaches of substrate ablation have been used for persistent and long-standing persistent AF and the best protocol procedure is yet to be established. The purpose of this study was to evaluate the outcomes of patients submitted to catheter ablation of persistent and long-standing persistent AF adding extra-pulmonary substrate approaches to pulmonary vein isolation.

Methods: We retrospectively studied 67 consecutive patients referred for the first procedure of catheter ablation of persistent or long-standing persistent AF from May 2016 to October 2018. The first 27 patients were subjected to pulmonary vein isolation and complex fractionated atrial electrograms (CFAE) ablation (group 1) and the last 40 patients were subjected to a tailored approach guided by voltage map areas and CFAE (group 2). Patient characteristics, procedure details and follow-up were assessed, and predictors of recurrence were determined.

Figure 1. Patients free from Atrial Fibrillation over time (days): Group 1 versus Group 2. (Log Rank X^2 5.076, P= 0.024)



CO 14 Figure

Results: Mean age was 59 ± 11 years with 58% being male. During a mean follow-up of 16 ± 6 months 27% of the patients showed AF recurrence. There were no differences in baseline characteristics of group 1 and 2. A higher recurrence rate was found in group 1 by comparison with group 2 (40.7% vs 17.5%, Log Rank X^2 = 5.076, p = 0.024) (Figure). Also, recurrence was associated with a longer AF duration, an increased baseline Brain Natriuretic Peptide (BNP), an increased left atrium (LA) volume, the presence of hyperthyroidism, the absence of sinus rhythm after procedure, the inducibility of AF post-ablation and the absence of an antiarrhythmic drug at hospital discharge. After adjustment for other confounders, the patient group (HR 5.16 [1.23-21.71], p = 0.025), a long-standing AF (HR 9.09 [1.41-58.82] p = 0.020), the BNP value at admission (HR 1.03 [1.01-1.05] p = 0.033) and the LA volume index (HR 1.13 [1.02-1.25], p = 0.017) were the only independent predictors of recurrence.
Conclusions: Ablation of persistent and long-standing persistent AF is feasible with good results when a substrate approach is added to pulmonary vein isolation. A tailored approach seems to be more efficient, showing best outcomes in mid-term follow-up. A long-standing AF, higher BNP value and the LA enlargement are important predictors of recurrence and should be used to better select patients and to manage follow-up.

CO 15. A NEW ELECTROPHYSIOLOGICAL TRIAD FOR ATRIAL FLUTTER CRITICAL ISTHMUS IDENTIFICATION AND LOCALIZATION

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Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

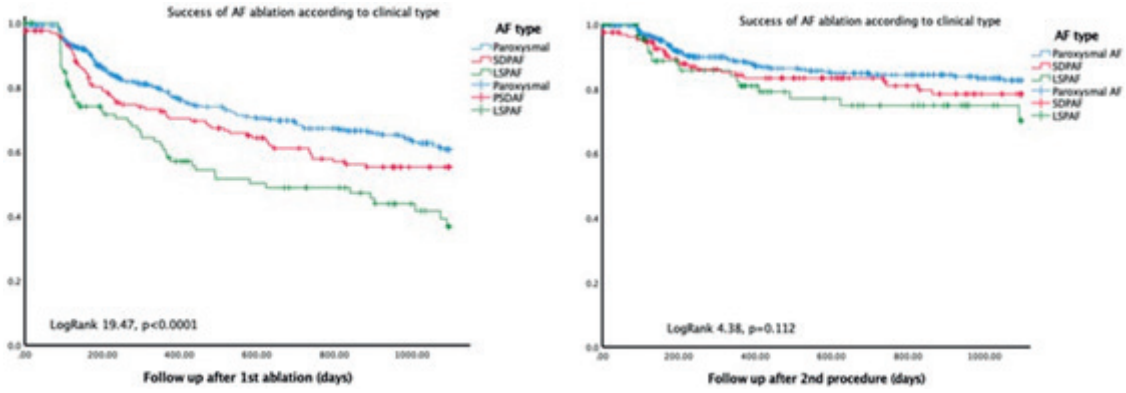
Introduction: In a previous retrospective study it was demonstrated that an electrophysiological triad was able to identify critical isthmus in atrial flutter (AFL) patients. This triad is based in the Carto® electroanatomical mapping (EAM) version 7, which displays a histogram of the local activation times (LAT) of the tachycardia cycle length (TCL), in addition to the activation and voltage maps. This study aimed to prospectively assess the ability of an electrophysiological triad to identify and localize the AFL's critical isthmus.
Methods: Prospective analysis of a unicentric registry of individuals who underwent left AFL ablation with Carto® EAM. All patients with non-left AFL, lack of high-density EAM, less than 2000 collected points or lack of mapping in any of the left atrium walls or structures were excluded. Ablation sites of arrhythmia termination were compared to an electrophysiological triad constituted by: areas of low-voltage (0.05 to 0.3 mV), sites of deep histogram valleys (LAT-Valleys) with less than 20% density points relative to the highest density zone and a prolonged LAT-Valley duration that included 10% or more of the TCL. The longest LAT-Valley was designated as the primary valley, while additional valleys were named as secondary.
Results: A total of 12 patients (9 men, median age 72 IQR 67-75 years) were included. All patients presented with left AFL and 67% had a previous atrial fibrillation and/or flutter ablation. The median TCL and number collected points were 250 (230-290) milliseconds and 3150 (IQR 2,340-3,870) points, respectively. All AFL presented with at least 1 LAT-Valley in the analysed histograms, which corresponded to heterogeneous low-voltage areas (0.05 to 0.3 mV) and encompassed more than 10% of TCL. Eleven of the 12 patients presented with at least 1 secondary LAT-Valley. All arrhythmias were effectively terminated after undergoing radiofrequency ablation in the primary or the secondary LAT-Valley location.
Conclusions: In a prospective analysis, an electrophysiological triad was able to identify the AFL critical isthmus in all patients. Further studies are needed to assess the usefulness of this algorithm to improve catheter ablation outcomes.

CO 16. CATHETER ABLATION OF LONG-STANDING PERSISTENT ATRIAL FIBRILLATION: THE UGLY TYPE OF AF?

Joana Brito, Tiago Rodrigues, Sara Pereira, Pedro Silverio Antonio, Beatriz Silva, Pedro Alves da Silva, Ceu Barreiros, Gustavo Lima da Silva, Luis Carpinteiro, Nuno Cortez-Dias, João de Sousa, Fausto j. Pinto

Centro Hospitalar de Lisboa Norte, EPE/Hospital Pulido Valente.

Introduction: In atrial fibrillation (AF) patients (pts), catheter ablation (CA) by isolating pulmonary veins (PVI) is the most effective therapeutic option in order to maintain sinus rhythm. The success rate of CA relies on type and duration of AF, being more successful in pts with paroxysmal AF and presenting suboptimal success in pts with long-standing persistent AF (LSPAF, > 12 months).
Objectives: To evaluate the success of AF ablation, particularly in LSPAF.
Methods: Single-center prospective study of pts submitted to CA between 2004 and 2020. The strategy, regardless of the type of AF, was based on PVI, complemented by cavo-tricuspid isthmus line (CTI) in pts with history of flutter. Additional CA strategies were selectively considered in pts with stable atypical flutter conversion, persistent triggers or no electrograms in the VPs. Pts were monitored with Holter/7-day event loop recorder (3, 6, 12 months and annually up to 5 years). Success was defined after the 90th day ablation, according to the absence of recurrences of any sustained atrial arrhythmias (> 30 sec). Cox regression and Kaplan-Meier survival were used to compare the success of ablation as a function of the clinical type of AF.
Results: 862 pts were submitted to AF ablation (67.3% male, mean age of 58 ± 0.41 years), including 130 pts (15.1%) with LSPAF, 63.3% with paroxysmal AF and 21.6% with short-duration persistent AF (SDPAF). In LSPAF, PVI was performed with irrigated catheter in 26.4%, PVAC in 39.5% and cryoablation in 34.1%. With a mean follow up period of 838 (IQ 159-1469) days, the 3-year success rate after a single procedure was 54.1% in LSPAF, compared to 72.4% in paroxysmal AF and 61.6% in SDPAF (LogRank - p < 0.0001, Figure 1). The risk of arrhythmic recurrence was 37% higher in patients with LSPAF comparing with other groups (HR 0.63 CI 95% 0.43-0.92, p 0.016). However after a mean of 1.17 procedures/patients, the success difference between groups was not detect (LogRank-p = 0.112, Figure 2). With additional ablation procedures (REDO), the success rate at 3 years was 82.9% LSPAF pts, compared 88.2% in paroxysmal AF pts and 83.6% in SDPAF pts. In LSPAF pts, different ablation techniques did not predict arrhythmic recurrence. Regarding comorbidities, higher prevalence of peripheral arterial disease (PAD, p = 0.005) a higher NT-proBNP (p = 0.006) and left auricular volume (p = 0.045) were associated with arrhythmic relapse.



CO 16 Figure

Conclusions: AF ablation is more effective when performed earlier in the natural history of the disease. However, even in LSPAF pts, an acceptable rate of success can be achieve with additional procedures, independently from the ablation techniques.

CO 17. LONG-TERM RISK OF MAJOR CARDIOVASCULAR EVENTS AFTER CAVOTRICUSPID ISTHMUS ABLATION: WHEN AND IN WHOM TO DISCONTINUE ORAL ANTICOAGULATION?

Joana Brito, Tiago Rodrigues, Pedro Silvério António, Beatriz Silva, Pedro Alves da Silva, Nelson Cunha, Ana Bernardes, Luís Carpinteiro, Gustavo Lima da Silva, Nuno Cortez-Dias, João de Sousa, Fausto J. Pinto

Centro Hospitalar de Lisboa Norte, EPE/Hospital Pulido Valente.

Introduction: Cavotricuspid isthmus ablation (CTA) is the 1st-line therapy to accomplish rhythm control in patients (pts) with typical atrial flutter (AFL). While AF embolic risk is well established, data regarding AFL and formal recommendations for long-term anticoagulation after CTA in pts with isolated AFL.
Objectives: To determine the risk of major adverse cardiovascular events (MACE) after CTA and to compared it with the presence of concomitant AF, concomitantly performing pulmonary vein isolation (PVI) and persistence on long-term oral anticoagulation (OAC).
Methods: Single-center retrospective study of pts submitted to CTA between 2015 to 2019, comprising three groups: I-pts with lone AFL; II-patients with AFL and prior AF submitted to CTA only; and III-pts with AFL and prior AF submitted to IVP and CTA. Clinical records were analyzed to determine the occurrence of MACE during the long-term follow up (FUP), defined as death (cardiovascular or unknown cause), stroke, clinically relevant bleed or hospitalization due to heart failure or arrhythmic events. Long-term OAC was defined as its persistence over 18 months after CTA. Analysis was performed with Kaplan Meier and Cox regression.
Results: 476 pts (66 ± 12 years, 80% males) underwent CTA: group I-284 pts (60%), II-109 pts (23%) and III-83 pts (17%). Baseline characteristics were similar between groups, except for age with group I pts being older (68 ± 12, 67 ± 11, 61 ± 11, p < 0.03). The mean baseline CHA_2DS_2VASc was 2.3 ± 1.5 and the median post-CTA follow-up was 2.8 year. The 1, 3 and 5years MACE risk was 6.8%, 21.1% and 32.1%, respectively and did not differ significantly between groups. OAC was suspended on the long-term in 105 pts (23%), at a mean of 241 days post-CTA. Suspension of OAC was associated with lower MACE risk (HR: 0.26, 95%CI 0.12-0.56, p 0.001). This effect was independent of age and CHA_2DS_2VASc, also a significant prognostic predictor (HR1.28, 95%CI 1.08-1.53, p0.005). The prognostic benefit of OAC suspension was driven by the group I and was not verified in pts with concomitant AF. In group I, withdraw of anticoagulation (56 pts 27.3%) was associated with 70% relative risk reduction in the 5year MACE risk (16.1% vs 42.9%, HR0.30, 95%CI 0.13-0.69, p 0.005). In group I, OAC was suspended in younger pts (65 ± 11 vs. 69 ± 12, p = 0.002), lower CHA_2DS_2VASc (1.9 ± 1.6 vs. 2.7 ± 1.4, p < 0.001) and lessen cerebrovascular disease (1.4% vs. 8.1%, p 0.036), heart failure (14.1% vs. 37.9%, p0.001), ischemic cardiomyopathy (8.5% vs 18.8%, p 0.04) and hypertension (60.6% vs. 75.3%, p 0.019).
Conclusions: In pts with AFL submitted to CTA, long-term risk of MACE was high, even in those without concomitant AF. Among pts with prior AF documented with typical AFL submitted to CTA, the long-term prognosis was similar. In pts with lone AFL submitted to successful CTA, it may be reasonable to suspend OAC within 18 months provided that concomitant AF is carefully excluded during FUP.

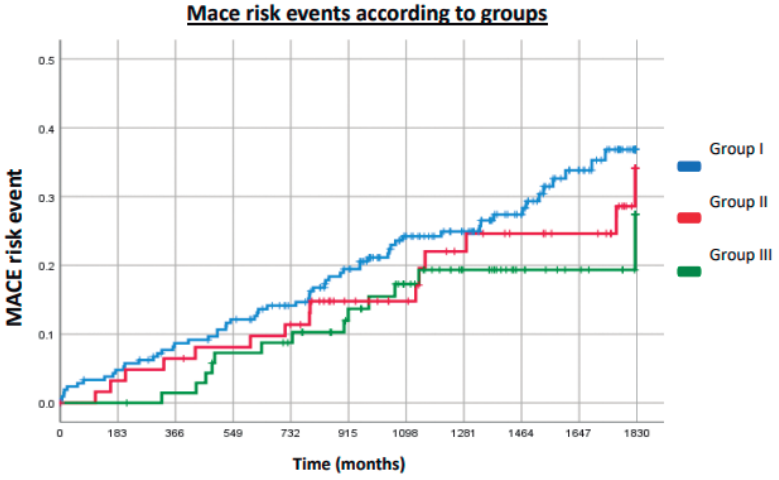
CO 12. PREVALENCE AND PREDICTOR FACTORS OF PERSISTENT PULMONARY VEIN ISOLATION IN REDO AF ABLATION PROCEDURE

Mariana Ribeiro da Silva, Gualter Santos Silva, Pedro Ribeiro Queirós, Rafael Teixeira, João Almeida, Paulo Fonseca, Marco Oliveira, Helena Gonçalves, Alberto Rodrigues, João Primo, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: Atrial fibrillation (AF) catheter ablation is a well-established procedure for the treatment of AF. The cornerstone of AF ablation is the complete isolation of pulmonary veins (PV). However, persistent PV isolation (PVI) is difficult to accomplish, with PV reconnection rates of > 70%. The factors associated with persistent PVI are still uncertain.
Objectives: To assess the PVI status in patients undergoing a redo ablation and to determinate the predictors associated with persistent PVI.
Methods: Consecutive patients who underwent a redo ablation between 2016 and 2020 were identified in a single-centre retrospective study. PVI status was assessed during electrophysiologic study with electroanatomic mapping system. Index procedures included second generation cryoballoon (CB), conventional radiofrequency (RF) before 2018 and "CLOSE" protocol

Endpoint	12-months	36-months	60-months
MACE	6.8%	21.1%	32.1%
Death (any cause)	2.4%	8.8%	14.4%
Stroke	0.9%	3.6%	7.1%
Clinically relevant bleeding	0.7%	2.4%	5.6%
Hospitalization of HF or arrhythmic event	3.2%	12%	16.2%



CO 17 Figure

guided RF ablation after 2018. Persistent PVI was defined by the absence of reconnection of all pulmonary veins.
Results: We included 83 patients with a mean age of 55.9 ± 11.9 years; 71.1% (n = 59) were male with a mean CHA2DS2-VASc score of 1.14 ± 1.0. Seventy-five percent had paroxysmal AF and undergone a redo 35.0 months (± 30.9) after the index PVI. Seventeen patients (20.5%) had persistent PVI whereas 66 patients (79.5%) had at least one PV reconnected after the index procedure, with a reconnection rate of 51.8% for right superior and inferior PV, 47.0% for left superior PV and 36.1% for left inferior PV. No statistically significant differences were noticed between patients with persistent and non-persistent PVI in baseline (clinical and echocardiographic characteristics). Regarding index ablation procedure, persistent PVI occurred more frequently in patients who underwent a "CLOSE" protocol-guided index PVI compared to RF pre-2018 and CB (45.5% vs 16.7%; p = 0.043). Twenty-nine percent of patients with persistent PVI had a "CLOSE" protocol-guided index PVI whereas only 9.1% of non-persistent PVI patients had a "CLOSE"-guided index PVI (p = 0.043). In this cohort, "CLOSE" protocol-guided index PVI was the only predictor of persistent PVI (odds ratio 4.2, 95% confidence interval 1.1-15.9; p = 0.037).
Conclusions: In patients undergoing redo AF ablation procedures, only 20.5% had persistent PVI. "CLOSE" protocol-guided index PVI presented significantly higher rates of persistent PVI. "CLOSE" protocol-guided index PVI was the only predictor for persistent PVI in patients with AF recurrence requiring a redo procedure.

Sexta-feira, 30 Abril de 2021 | 13H00-14H00

Sala Virtual 2 | CO 04 - Doença coronária-genética-avaliação funcional

CO 20. CIRCULATING ENDOTHELIAL PROGENITOR CELLS AS PREDICTORS OF LONG-TERM CARDIOVASCULAR MORTALITY AFTER MYOCARDIAL INFARCTION: WHICH DEFINITION SHOULD WE USE?

Diogo de Almeida Fernandes[1], Vânia Leal[2], Bárbara Oliveiros[3], Sónia Silva[2], Lino Gonçalves[4], Carlos Fontes Ribeiro[3], Natália António[4]

[1]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra. [2]Faculdade de Farmácia da Universidade de Coimbra. [3]Faculdade de Medicina de Coimbra. [4]Centro Hospitalar e Universitário de Coimbra.

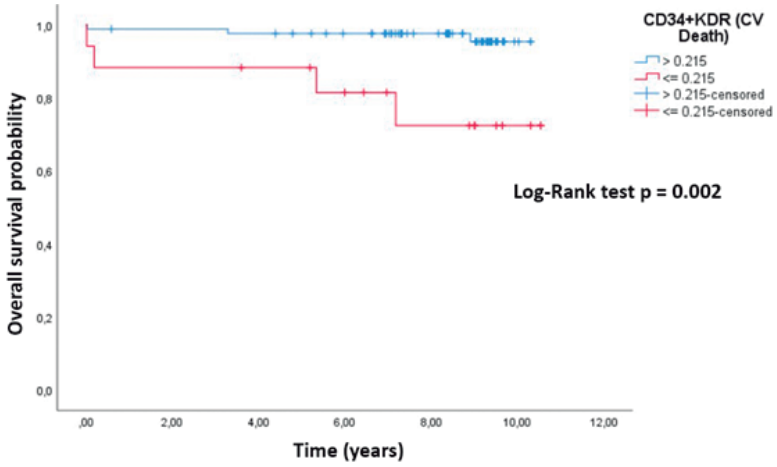
Introduction: Endothelial progenitor cells (EPCs) are bone marrow-derived cells that play a crucial role in vascular repair after an acute myocardial infarction (AMI). Recent studies suggest that circulating EPCs levels may be useful as a surrogate biomarker for cardiovascular (CV) events. Nevertheless, the lack of a consensual definition and phenotypic characterization of EPCs hampers its use in clinical practice. CD34+KDR+, CD45dimCD34+KDR+ and CD34+CD133+KDR+ are among the most used antigenic phenotypes to define circulating EPCs but the best phenotype to predict CV outcomes remains to be determined.
Objective: To determine the EPCs' surface phenotype that best predicts long-term CV death after an AMI, and to evaluate its optimal cut-off point.
Methods: One-hundred AMI patients were prospectively enrolled in the study. Circulating EPCs were quantified through high-performance flow cytometer within the first 24 hours of admission using different surface markers combinations allowing to simultaneously compare three EPCs definitions: 1) CD34+KDR+, 2) CD45dimCD34+KDR+, 3) CD34+CD133+KDR+. Mean follow-up time was 8.0 ± 2.2 years.
Results: The mean age of our population was 59.7 ± 11.0, the majority of patients were male (90%), 65% had ST-elevation myocardial infarction (STEMI) and 35% non-ST segment elevation myocardial infarction (NSTEMI). Diabetes mellitus was present in 38% and hypertension in 67% of the studied sample. During the long-term follow-up, 34 patients had re-admissions due to cardiovascular causes, 11 of them for AMI. Thirty-one patients had major adverse cardiovascular events (MACE) and 19 died. Using ROC curves, the CD34+KDR+ phenotype showed the biggest area under the curve regarding prediction of CV mortality (0.722; p = 0.010; confidence interval 95% (95%CI): 0.554 to 0.890). Patients with lower levels of EPCs according to this definition (≤ 0.022%) are 7 times more likely to die from CV causes at any time (hazard ratio = 7.55; p = 0.008; 95%CI 1.69 to 33.83).
Conclusions: The CD34+KDR+ phenotype appears to be the best definition of circulating EPCs for predicting long-term CV mortality after AMI. Further studies with larger samples are needed to clarify the optimal cut-off point for determining patients at risk and its role in everyday Cardiology.

CO 19. A GENETIC RISK SCORE PREDICTS RECURRENT EVENTS AFTER MYOCARDIAL INFARCTION IN YOUNG PATIENTS WITH A LOW LEVEL OF TRADITIONAL RISK FACTORS

Flávio Mendonça[1], Isabel Mendonça[2], Margarida Temtem[2], Marina Santos[2], Adriano Sousa[2], Ana Célia Sousa[2], Eva Henriques[2], Sónia Freitas[2], Mariana Rodrigues[2], Sofia Borges[2], Graça Guerra[2], António Drumond[1], Roberto Palma dos Reis[3]

[1]Hospital Central do Funchal. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]Nova Medical School.

Introduction: Coronary Heart Disease (CAD) is a multifactorial disease, including environmental and genetic risk factors. Current smoking, dyslipidemia and diabetes have a significant impact in long- term mortality and morbidity. However, several genetic variants associated with CAD



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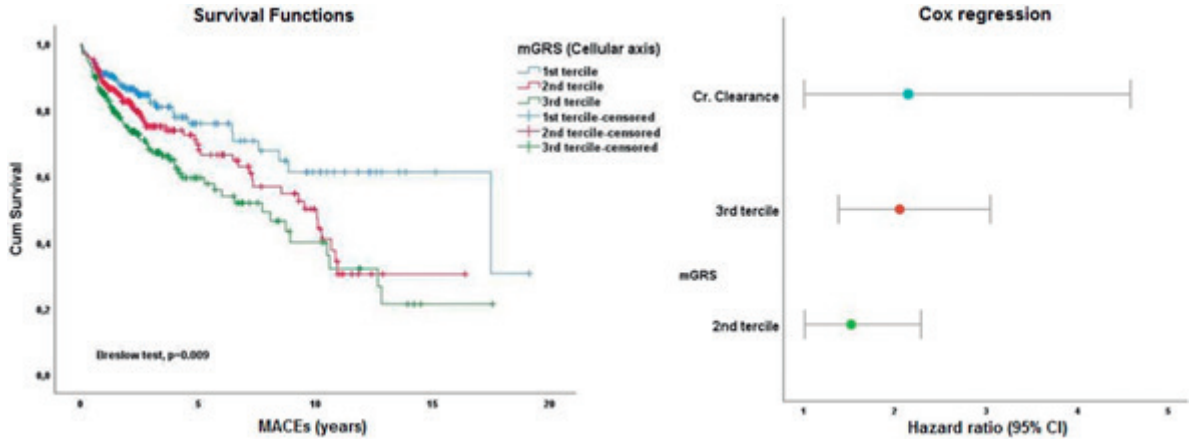

CO 19 Figure

but not with traditional risk factors (TRFs) has been reported to improve prediction of events and extended mortality, in younger CAD people.
Objectives: To evaluate the clinical utility of a GRS composed by variants from GWAS associated to CAD but not with TRF to predict life-long residual risk in patients under 55 years old and a low level of TRFs.
Methods: We conducted a prospective study with 573 consecutive patients aged < 55 years presenting with AMI and a low level of TRFs (without diabetes and with LDL cholesterol > 150 mg/ml). We analysed several biochemical markers and performed a GRS with variants not associated with TRFs (TCF21 rs12190287, CDKN2B-AS1 rs1333049, CDKN2B rs4977574, PHACTR1 rs1332844, MIA3 rs17465637, ADAMTS7 rs3825807, ZC3HC1 rs11556924, SMAD3 rs17228212 and GJA4 rs618675). We studied the GRS association with a primary composite endpoint of all-cause vascular morbidity and mortality including recurrent acute coronary syndrome (myocardial infarct and unstable angina), coronary revascularization (coronary artery bypass grafting (CABG) and percutaneous coronary intervention (PCI), re-hospitalization for heart failure, ischemic stroke and cardiovascular dead.
Results: A total of 573 patients were studied and followed up for a mean of 4.7 ± 4.0 years. There were 169 recurrentcardiovascular events. The GRS was sub-divided into terciles, verifying that patients in the third tercile (high risk) had a higher number of risk alleles. Compared with the low-risk GRS tercile, the multivariate-adjusted HR for recurrences was 1.520 (95%CI 1.011-2.286); p = 0.044 for the intermediate-risk group and was 2.051 (95%CI 1.382-3.044); p < 0.0001 for the high-risk group. Inclusion of the GRS in the model with TRFs alone (low risk) improved the C statistic (DC-statistic = 0.030; with statistical significance, p = 0.004), cNRI (continuous net reclassification improvement) (30.8%), and the IDI (integrated discrimination improvement) index (0.022).
Conclusions: A multilocus GRS can identify young patients with coronary heart disease with a low level of TRFs, but with a significant risk of recurrence of long-term events. Genetic information can improve clinical risk stratification and be essential to define the best approach to managing these patients.

CO 21. THE QUEST FOR GRACE 3.0: IMPROVING OUR BELOVED RISK SCORE WITH MACHINE LEARNING

José Pedro Sousa[1], Afonso Lima[2], Paulo Gil[2], Jorge Henriques[2], Lino Gonçalves[3]

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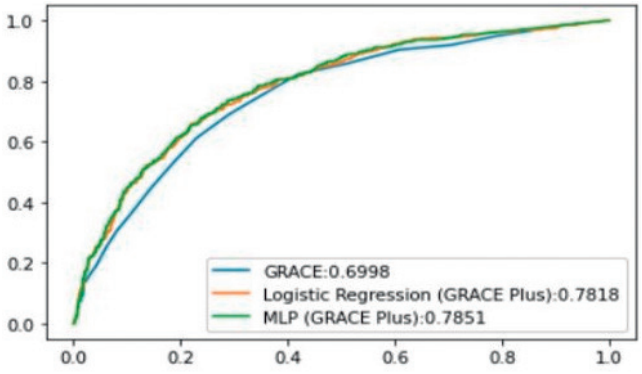
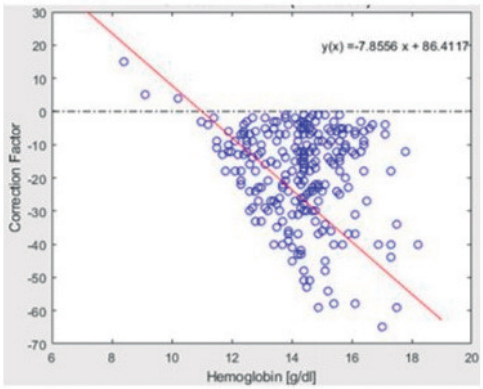
[3]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: Although widely recommended for risk assessment of patients with acute coronary syndrome (ACS), the Global Registry of Acute Coronary Events (GRACE) score famously lacks discriminative power. On the other hand, in-hospital serum hemoglobin levels (HG) have been shown to simultaneously forecast both thrombotic and hemorrhagic hazards.
Objectives: To ascertain the extent to which the incorporation of HG in the GRACE score is able to increase its predictive ability.
Methods: Retrospective single-center study encompassing ACS patients consecutively admitted to a Cardiac Intensive Care Unit. Inclusion criteria comprised the acquaintance of GRACE score, HG and vital status on a 6-month follow-up, which served as the outcome. 3 discriminative models were first created: (standard) GRACE score (model 1); GRACE score plus HG, by means of logistic regression (model 2); GRACE score plus HG, by means of multilayer perceptron (a class of feedforward artificial neural network) (model 3). Hereafter, if models 2 and/or 3 were to be found significantly more discriminative than model 1, a correction factor would be calculated, also allowing for the conception of the most predictive model possible (model 4). The discriminative ability was estimated by both the area under the receiver-operating characteristic curve (AUC), and the dyad sensitivity/specificity.





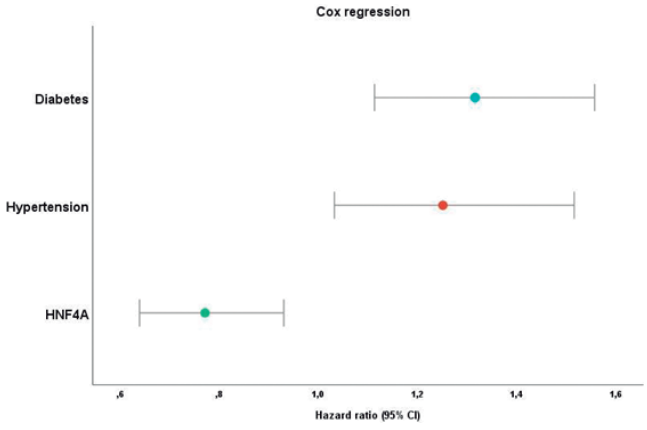
Results: Between April 2009 and December 2016, 1468 patients met study inclusion criteria. Mean age was 68.0 ± 13.2 years and 29.8% were female, while 36.9% presented with ST-segment elevation myocardial infarction. Mean GRACE score was 145.5 ± 47.0 and mean HG was 13.5 ± 2.0. All-cause mortality reached 10.5%, at 6 months. Predictive power for models 1, 2 and 3 may be quantified as follows: AUC 0.6998, sensitivity 77.7% and specificity 62.5%; AUC 0.7818, sensitivity 36.3% and specificity 92.2%; AUC 0.7851, sensitivity 47.7% and specificity 88.5%, respectively. Both models 2 and 3 exhibited more discriminative ability than model 1 (p < 0.001), due to their higher specificity. As such, a correction factor was computed (y = -7.8556x + 86.4117) and model 4 was created, displaying a sensitivity of 65.9% and a specificity of 76.5%.
Conclusions: HG single-handedly provides incremental predictive value-namely more specificity-to the GRACE score. In particular, the latter seems to overestimate ACS patients' risk if HG is normal or close to normal.

CO 22. HNF4A GENE CAN BE A GENETIC PROTECTOR FOR CORONARY ARTERY DISEASE

Margarida Temtem[1], Marco Gomes Serrão[2], Isabel Mendonça[2], Marina Santos[2], Flávio Mendonça[2], Adriano Sousa[2], Ana Célia Sousa[2], Eva Henriques[2], Sónia Freitas[2], Mariana Rodrigues[2], Sofia Borges[2], Graça Guerra[2], António Drumond[3], Roberto Palma dos Reis[4]

[1]Hospital Central do Funchal. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]Hospital Dr. Nélio Mendonça. [4]Nova Medical School.

Introduction: Hepatocyte nuclear factor4 A (HNF4A) gene was considered by GWAS associated with atherosclerosis and CAD susceptibility. Loss-of-function mutations in human hepatocyte nuclear factor 4α (HNF4α), a transcriptor factor encoded by the HNF4A gene, are associated with maturity-onset diabetes of the young and lipid disorders. However, the mechanisms underlying the lipid disorders are poorly understood.
Objectives: We propose to identify Hepatocyte nuclear factor4 A genetic predisposition to atherosclerosis progression and events occurrence or regression and better prognosis, through a cohort study from GENEMACOR population.
Methods: We investigated a cohort of 1712 patients who underwent coronary angiography with more than 70% stenosis of at least one main coronary vessel. 33 SNPs associated with the risk of CAD in previous GWAS were genotyped by TaqMan assays methodology, including HNF4A. We evaluated the best genetic model associated with CAD prognosis (events) with a 95%CI in bivariate analysis. The hazard function was performed by a Cox survival regression model adjusted for age, sex, type 2 diabetes, hypertension, and hypercholesterolemia, to evaluate their relationship with the event´s incidence. Finally, we constructed Kaplan-Meier cumulative-event curves for the significant genetic variants.



Results: Our evaluation revealed, among the 33 SNPS, a SNP paradoxically associated with protection from atherosclerosis progression and events occurrence: rs1884613 C>G in the HNF4α gene on chromosome 20 dominant model [OR = 0.653; 95%CI (0.522-0.817); p = 0.0002]. Cox survival regression model showed a CAD protective effect of HNF4α with a Hazard ratio (HR) of 0.771; p = 0.007. The Kaplan-Meier cumulative event analysis disclosed that the CG+GG vs CC genotype of rs1884613 HNF4α was associated with a better prognosis (Breslow test, p = 0.004) at the end of the follow-up.
Conclusions: We identified, in this study, one SNPs paradoxically associated with a better CAD prognosis rs1884613 in HNF4α. The HNF4α gene variants could induce loss of HNF4α function, modifying and modulating hepatic lipase and lipid metabolism conferring a beneficial effect on atherosclerosis progression and events occurrence.

CO 18. VIRTUAL FRACTIONAL FLOW RESERVE DERIVED FROM CORONARY ANGIOGRAPHY -ARTERY AND LESION SPECIFIC CORRELATIONS

Tânia Mano, Vera Ferreira, Rúben Ramos, Eunice Oliveira, Ana Santana, João Melo, Cristina Fundinho, Isabel Cardoso, Bárbara Teixeira, Duarte Cacela, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Virtual Fractional flow reserve (vFFR) from standard non-hyperaemic invasive coronary angiography (ICA) has emerged as a promising non-invasive test to assess hemodynamic severity of coronary artery disease (CAD). We aim to investigate the difference in vFFR analysis between vessels and specific lesions.
Methods: Retrospective analysis of consecutive patients (pts) who underwent invasive functional assessment (iFA) in a tertiary center between 2019 and 2020. vFFR was calculated using dedicated software (CAAS Workstation 8.4) based on coronary angiograms of the acquired in ≥ 2 different projections, by operators blinded to iFA results. Diagnostic performance of vFFR was evaluated and correlated with iFA, according to coronary vessel, vessel diameter at stenosis, diameter stenosis and area stenosis at lesion. vFFR was considered positive when < 0.80. FFR < 0.8 and iFR/RFR < 0.90 were classified as positive according to current clinical standards.
Results: 106 coronary arteries of 95 pts (78% male, mean age 67.8 ± 9.7 years) underwent vFFR evaluation. ICA indications were chronic coronary syndrome in 63% or acute coronary syndrome (non-culprit lesion) in the remaining pts. VFFR accuracy was good (AUC 0.839 (p < 0.001) and Pearson's correlation coefficient 0.533 (p < 0.001) when vFFR was measured in the distal vessel segment. The correlation improved when vFFR were assessed at lesion site (r = 0.631, p < 0.001) or up to 1cm below the stenosis (0.610, p < 0.001). Binary concordance of 89% were observed in RCA and LAD (Sensibility -S 68%, Specificity-Sp 96%, False positive -FP 3.8%, False negative - FN 31%, predictive positive value-PPV 87%, predictive negative value- PNV 89%), while in the circumflex coronary artery binary concordance were of 77% (S 50%; Sp 82%; FP 18%; FN 50%; PPV 33% and PNV 90%). Correlation between vFFR and iFA was higher in vessels ≥ 2 mm (r = 0.730, p < 0.001) and in lesions in the extremes of the severity spectrum (Table).

Table 1. Correlation of virtual Fractional Flow Reserve and Invasive functional assessment derived from coronary angiography, according to diameter and area of stenosis.

	Diameter of stenosis		Area of stenosis	
	<30%	>50%	<1.0mm2	>6.0mm2
Correlation (R)	0.720	0.708	0.826	0.835
(p value)	P<0.001	p=0.02	p<0.001	p=0.001

Conclusions: vFFR has a moderate to high linear correlation to iFA, depending on the artery and type of lesion studied. The higher correlation was found when vFFR were measured at lesion site, in non-circumflex artery stenosis, in vessels ≥ 2 mm and in vessels with mild or severe stenosis.

Sexta-feira, 30 Abril de 2021 | 09H00-10H00

Sala Virtual 3 | CO 05 - Ciência Básica

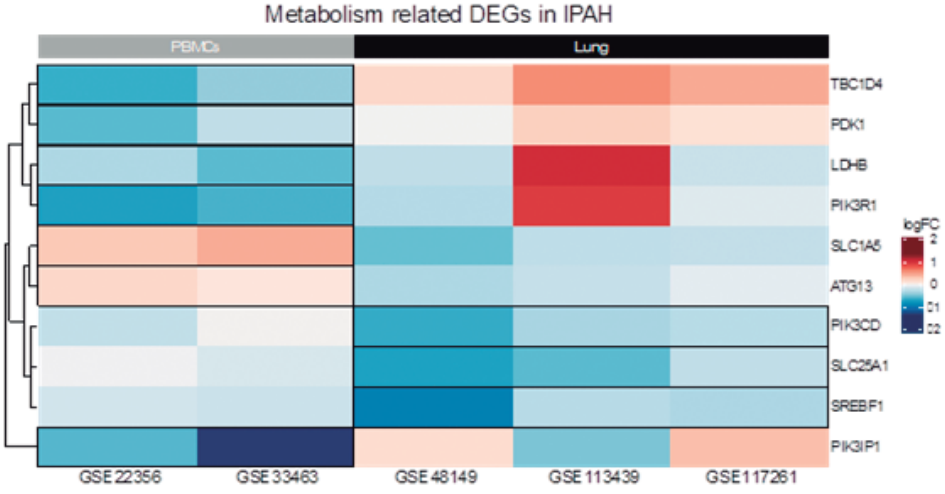
CO 27. ESTA COMUNICAÇÃO FOI RETIRADA A PEDIDO DOS AUTORES

CO 23. METABOLIC REPROGRAMMING IN PULMONARY ARTERIAL HYPERTENSION: IS IT A CANCER-LIKE DISEASE?

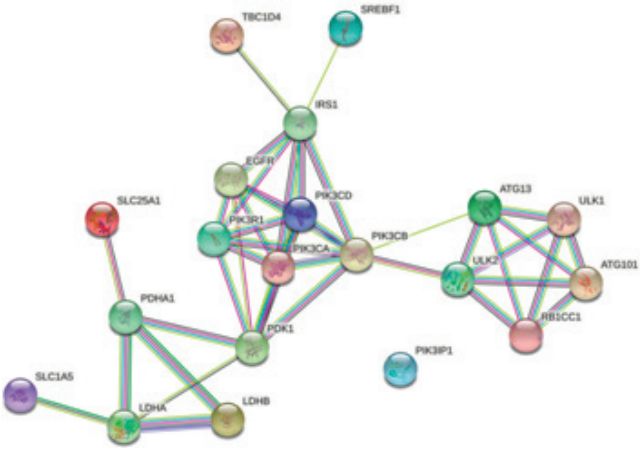
Cátia Santos Ferreira, Mónica Abreu, Rui Baptista, Lino Gonçalves, Henrique Girão, Graça Castro

Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: Idiopathic Pulmonary arterial hypertension (iPAH) is a rare and chronic disease associated with poor outcomes. Previously considered a disease restricted to the pulmonary circulation, PAH is now being recognized as a systemic disorder that is associated with metabolic dysfunction. The aim of this study is to analyze the metabolic reprogramming in the lung and peripheral blood mononuclear cell (PBMCs) of iPAH patients and explore their potential roles in PAH pathophysiology.
Methods: Five independent datasets, containing transcriptomic data of human PBMCs (GSE22356 and GSE33463) and lung (GSE48149, GSE113439 and GSE117261) samples, from 139 iPAH patients and 96 healthy controls, were downloaded at the GEO database. In each dataset, the samples were normalized and a pair-wise comparison between control and IPAH samples was performed using limma package, for the R programming language. Genes with a p-value lower than 0.05 were considered differentially expressed between the two groups. A subset of metabolism related genes was selected, and their expression was compared across the datasets.
Results: Among the 13 genes with differential expression identified, only 10 had a coherent expression across all datasets (Figure 1). Firstly, we report an association with insulin resistance through impairment of PI3K signaling in iPAH patients, by expressing lower levels of the heterodimer PIK3CD and regulatory PIK3IP1 and PIKR1 subunits in PBMCs, and by expressing higher levels of its downstream targets in the lung (TBC1D4). However, more extensive metabolic dysfunction was observed. A significant glycolytic shift in the lung and PBMCs was present, as a consequence of deregulation in genes involved in aerobic glycolysis and decreased fatty acid oxidation,



CO 23 Figure 1. Metabolism related differential gene expression (DEGs) in IPAH.



CO 23 Figure 2. Protein-protein interaction network showing 20 nodes: the 10 DEGs plus 10 closely related genes. Generated with STRING.

namely increased expression of PD1K and lower levels of expression of LDHB. The findings of decreased SLC25A1 protein in both PBMCs and lung suggest impairment of the tricarboxylic acid (TCA) cycle flux in PAH. Additionally, SLC1A5 highlights the involvement of glutamine metabolism and glutaminolysis derangements in PAH. Conversely, SREBP1 is involved in sterol biosynthesis and lower levels in PMBCs results in impaired resolution of inflammatory responses. Finally, although the role of autophagy in iPAH is complex, higher levels of expression of ATG13 in PBMCs and lower levels in the lung confirm autophagy deregulation in iPAH. Interestingly, all the metabolic pathways identified (Figure 2) are hallmarks of the metabolic reprogramming seen in cancer cells, a finding already suggested by the clonal proliferation of pulmonary artery smooth muscle cells described in plexiform lesions.

Conclusions: Our results provide novel insights into the metabolic regulation in iPAH. Molecularly, these cells exhibit many features common to cancer cells, suggesting the opportunity to exploit therapeutic strategies used in cancer to treat iPAH.

CO 25. HOMEOSTASIS RESCUE: THE EFFECT OF DRUG VS LIFESTYLE APPROACH IN LOW DOSE OF DOXORUBICIN TREATED RATS

Filipa Machado, Ângela Amaro-Leal, Ana I. Afonso, Isabel Rocha, Vera Geraldes

Faculdade de Medicina da Universidade de Lisboa.

Doxorubicin (DOX) is a highly effective anticancer agent that improved survival and patient's quality of live but causes dose-dependent cardiotoxic effects leading to a severe and irreversible cardiomyopathy in many patients. Different preventive strategies, such physical exercise and β-blockers, have been proposed to maintain the physiological homeostasis. However, besides the extensive research has been done to understand the mechanism and pathophysiology of DOX it is not clear what is the most effective preventive approach to maintain the physiological homeostasis. In the present work, we intended to compare the efficacy of two different approaches, one pharmacological intervention, using atenolol, a β1 selective antagonist without antioxidant properties, and other non-pharmacological intervention using a treadmill training in an animal model of DOX. Female Wistar rats were divided into 4 groups: Doxorubicin (DOX; ip. cumulative dose 8 mg/kg, 1 time/week, for 4 weeks), DOX with physical exercise (DOX + EX; treadmill, 22 cm/seg for 30 minutes, 5 times/week), DOX with β-blocker (DOX + ATN: DOX; ip. cumulative dose 8 mg/kg, 1 time/week and 4 mg/ml, Atenolol; oral administration, 5 times/week, for 4 weeks) and controls (ip. with saline solution). Blood pressure (BP), cardiac (HR) and respiratory (RF) frequency, baro- and chemoreflexes were evaluated. Our results reveal that DOX treatment triggered a significant decrease in BP and HR, caused hypopnea, decreased baro and chemoreflexes, without evidence of sympatho-excitation. These changes can be explained by the decline in cardiac function, respiratory muscle weakness, autonomic dysfunction and vascular changes induces by low doses of DOX. During treatment with DOX, the physical activity protocol countered some of the adverse effects caused by DOX. It normalized BP, HR and RF to physiological values, and decreases the loss in baroreflex gain. Chemoreflex sensitivity, sympathetic and parasympathetic activities remained similar. Atenolol treatment, similar to physical activity effect, also increased baroreflex gain and RF to normal values, causing also a clear tendency to maintain BP values. Although complementary data is still needed, with these results we can conclude that treadmill training was more effective than atenolol in counteracting the adverse effects of the cumulative low dose of DOX administered, suggesting that physical activity is a good non-pharmacological alternative to atenolol for preserving the homeostasis during DOX therapy.

CO 26. MULTI-SPECIES TRANSCRIPTOMIC DATA ANALYSIS REVEAL THREE CANDIDATE GENES, RESPONSIBLE FOR THE TRANSITION FROM COMPENSATED LEFT VENTRICLE HYPERTROPHY TO HEART FAILURE

Mónica Abreu[1], Cátia Ferreira[2], Lino Gonçalves[2], Henrique Girão[1], Rui Baptista[1]

[1]Faculdade de Medicina de Coimbra. [2]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: Heart failure (HF) is the common final syndrome for a wide spectrum of heart diseases, including hypertrophic cardiomyopathy, systemic arterial hypertension, aortic stenosis and aortic coarctation, usually following a variable period of compensated left ventricle hypertrophy (cLVH). Despite its importance, the transition from a cLVH phenotype to overt HF in humans is poorly understood. In this study, we aimed to find a molecular signature for the transition from cLVH to decompensated HF conserved among species and mechanisms of disease.

Methods: Four datasets, containing gene expression data of cLVH and HF samples, were selected from GEO data repository. The selected datasets included three different species: Rattus norvegicus (GSE4286 and GSE47495), Canis lupus familiaris (GSE5247) and Cavia porcellus (GSE78077) and different models of cLVH (pressure overload, genetic, and both). The intensity files (CEL files) containing the expression data were analysed using the Transcriptome Analysis Console 4.0 (TAC 4.0.2.15, Applied Biosystems). To identify differentially expressed genes (DEGs) a p-value cutoff of 0.05 was applied.

Results: The lists of DEGs obtained in the comparison cLVH versus HF, in each dataset, were uniformized to human identifiers and merged, resulting in a list containing 8,307 genes. Most of the genes were differentially expressed in only one dataset (6,252, 75.3%). DEGs present in two datasets were 1,850 (22.3%), in three datasets 202 (2.4%), and finally, present in all datasets only 3 genes were found. The first gene identified was CDKS1B (CDK regulatory protein), which belongs to a family of proteases related to the cell cycle. CKS1B upregulation activates the STAT3 and MEK/ERK pathways and promotes cell proliferation. Indeed, negative regulation of the MEK/ERK reduces cardiac hypertrophy induced by pressure overload. Secondly, type 2 phosphatidylinositol-5-phosphate 4-kinase (PI5P4K) converts phosphatidylinositol-5-phosphate to phosphatidylinositol-4.5-bisphosphate, and plays an important role in inflammatory response and autophagy. However, its role in the heart remains unknow. Lastly, the Mesenteric Estrogen Dependent Adipogenesis (MEDAG) adipokine was also differentially expressed in HF. Its role in myocyte metabolism is not defined but may parallel nutrient uptake role seen in adipose and reflect reliance on lipid oxidation.

Conclusions: We identified three genes that are differentially expressed in HF compared to cLVH, involved in cell proliferation, autophagy, inflammation, and lipid metabolism. This data requires confirmation in human studies. Such advance would be an important step toward identifying those risk factors, especially genetic variation, that predispose individuals with cLVH to develop HF.

CO 24. PHYSICAL EXERCISE OR ATENOLOL: WHAT IS THE BEST STRATEGY TO COUNTERACT THE BEHAVIORAL MODIFICATIONS INDUCED BY LOW DOSES OF DOXORUBICIN?

Ângela Raquel Amaro Leal, Filipa Machado, Ana I. Afonso, Isabel Rocha, Vera Geraldes

Faculdade de Medicina da Universidade de Lisboa.

Doxorubicin-induced cognitive impairment and cardiovascular disorders are widely recognized as common complications of cancer therapies, which dramatically deteriorates the patients' quality of life, preventing them from restoring their pre-cancer life. Often termed "chemobrain", these anatomical and functional cardiac changes, including the autonomic nervous system, could interfere with the control of different cognitive domains, with changes in various aspects of memory and executive function, and emotional factors, such as anxiety and depression. Different preventive strategies, such as beta-blockers or physical activity affect positively brain function and can prevent anthracycline-induced sympathoexcitation. Thus, the current study was undertaken to test the hypothesis that beta-blockers or physical exercise can prevent or relieve Dox-induced cognitive and behavioral impairments. We also assess the relationship between heart rate variability (HRV), as a measure of autonomic nervous system (ANS) functioning, and behavioral performance in an animal model of low dose of doxorubicin (DOX). For that, adult female Wistar rats (n = 30), aged more than 20 weeks, were randomly divided into 3 groups, namely doxorubicin (DOX; ip cumulative dose 8 mg/kg, 1 time/week, for 4 weeks), DOX with beta-blockers (DOX+ATN; Atenolol, OA 4 mg/ml, 5 times/week), DOX with exercise training (DOX+EXER; treadmill, 30 min to 22 cm/seg, 5x/week). Anxiety (elevated plus maze), locomotor activity (open-field test) and working memory (Y maze test) were analyzed 2 and 4 weeks after DOX initiation. Overall, our results showed that low dose DOX therapy results in anxiety-like behavior over time and tended to reduce locomotor activity, without evidence of sympatho-excitation. Nevertheless, working memory were not affected. Atenolol treatment significantly increased the amount of time that DOX animals spent in the open arms of the elevated plus maze, mitigating the DOX induced-anxious behavior. This beta-blocker tended to increase locomotor activity and working memory over-time. Physical exercise protocol, similar to atenolol effect, tended to increase the time spent in the open arms, the total distance travelled and the percentage of alternation, suggesting improvements in locomotion and working memory and relieving anxiety associated with DOX therapy. Although both pharmacological and non-pharmacological interventions appear to have a positive effect on behavioral function, atenolol had a more pronounced protective effect. Our preliminary results also provide additional evidence that an increased sympathetic activity, but not decreased parasympathetic activity, is associated with better cognitive performances. However, complementary biochemical and molecular analysis are needed to substantiate this claim.

Sexta-feira, 30 Abril de 2021 | 12H45-14H00

Sala Virtual 3 | CO 06 - Valvulopatias

CO 33. FUNCTIONAL MITRAL REGURGITATION PROFILE AND REFERRAL PATTERNS FOR MITRAL VALVE INTERVENTION OF A REAL-WORLD COHORT OF HEART FAILURE PATIENTS

João Presume, Francisco Albuquerque, Pedro Lopes, Pedro Freitas, Marisa Trabulo, Maria João Andrade, Miguel Mendes, Regina Ribeiras

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Patients with heart failure and reduced ejection fraction (HFrEF) frequently have significant functional mitral regurgitation (FMR), which carries important prognostic impact. Randomized clinical trials on transcatheter mitral-valve repair have shown conflicting results, and their representativeness in real-world populations are unclear. This real-world study sought to identify the proportion of patients who would be eligible for mitral valve intervention and describe the current referral patterns at an academic center.
Methods: We conducted a single center cross-sectional study enrolling consecutive patients with HFrEF and FMR under guideline directed medical therapy from January 2010 to December 2018. Moderate FMR was defined as the presence of an effective regurgitant orifice area (EROA) of ≥ 20 mm^2 or a regurgitant volume (Regvol) of ≥ 30mL/beat, according to American Society of Echocardiography guidelines. Demographic, clinical, echocardiographic and treatment data were assessed. Main MITRA-FR and COAPT Trial eligibility criteria (NYHA class, left ventricular ejection fraction (LVEF), left ventricle end-systolic diameter, pulmonary artery systolic pressure, and right ventricle dysfunction) were applied according to trial protocols. Patterns

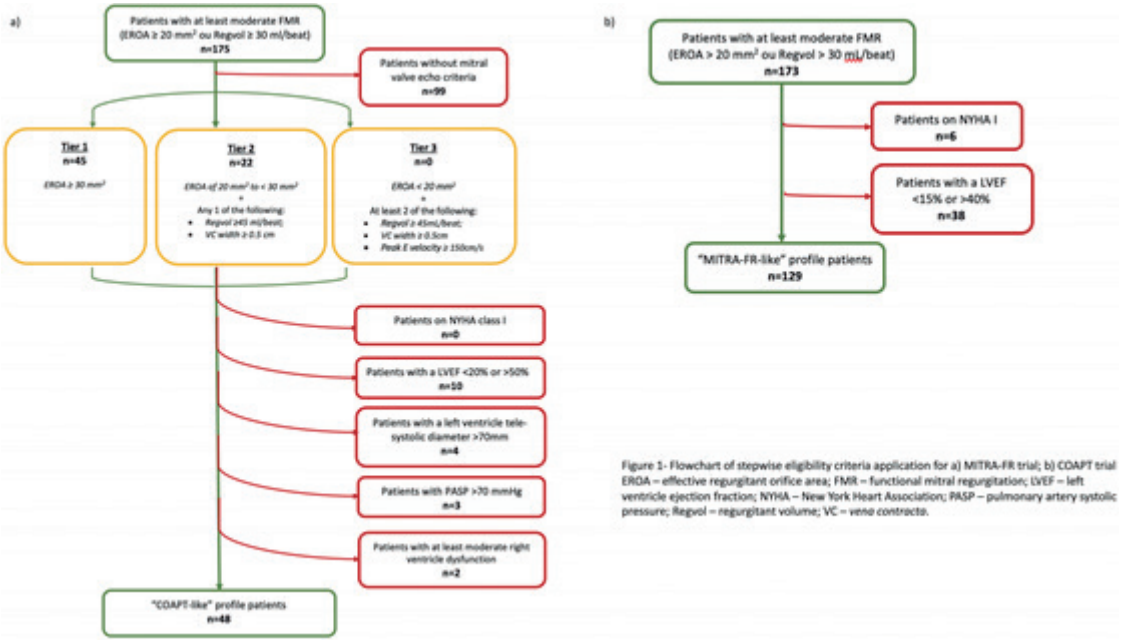


Figure 1- Flowchart of stepwise eligibility criteria application for a) MITRA-FR trial; b) COAPT trial
EROA – effective regurgitant orifice area; FMR – functional mitral regurgitation; LVEF – left ventricle ejection fraction; NYHA – New York Heart Association; PASP – pulmonary artery systolic pressure; Regvol – regurgitant volume; VC – *vena contracta*.

CO 33 Figure

of referral for mitral valve intervention were assessed by pre-procedural transesophageal echocardiography for mitral regurgitation evaluation.
Results: A total of 175 patients with at least moderate FMR were included in the analysis (mean age 70 ± 12 years, 80% male, mean LVEF 32% ± 9). After applying the main eligibility criteria for each study, 73.7% (n = 129) of patients would have been enrolled in MITRA-FR trial, whereas only 27.4% (n = 48) patients would have met criteria for COAPT trial (Figure 1). Patients with MITRA-FR profile had a mean EROA 25 ± 8 mm^2; mean Regvol 36 ± 9 mL/beat; mean LVEDV 205 ± 72 mL; EROA/LVEDV ratio 0.13 ± 0.04. "COAPT-like" patients had a mean EROA 33 ± 10 mm^2; mean Regvol 48 ± 13 mL/beat; mean LVEDV 203 ± 65 mL; mean EROA/LVEDV ratio 0.17 ± 0.05. Only 13.1% (n = 23) were referred for transesophageal echocardiography in order to establish the criteria of feasibility for mitral intervention. A total of 16 patients (9.1%) were submitted to mitral valve intervention during follow-up.
Conclusions: In a real-world population of HFrEF patients with significant FMR, more than one fourth of patients had a "COAPT-like" profile and could have benefited from percutaneous mitral valve intervention. The referral rate for evaluation for a potential intervention was low, which precludes patients from benefiting from this type of treatment.

CO 32. LEFT VENTRICULAR MYOCARDIAL WORK IN PATIENTS WITH HIGH GRADIENT SEVERE SYMPTOMATIC AORTIC STENOSIS

Gustavo Sá Mendes[1], João Abecasis[1], Sérgio Maltez[1], Sara Guerreiro[1], Pedro Freitas[1], Eduarda Horta[1], Telma Lima[1], Regina Ribeiras[1], Maria João Andrade[1], Nuno Cardim[2], Victor Gil[3]

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Introduction: Left ventricular myocardial work (LVMW) is a novel method to evaluated left ventricular (LV) function using pressure-strain loops. It might correct global longitudinal strain (GLS) for afterload, being eventually useful to assess whether GLS reduction is due to reduced contractility (reflected as reduced myocardial work) or increased afterload (reflected as increased myocardial work).
Objectives: to describe indices of LVMW in a group of patients with severe symptomatic aortic stenosis (AS).
Methods: we prospectively studied 104 consecutive patients (age: 71 years [IQR 66.5-75.5] years, 51% men) with severe symptomatic high gradient AS: mean transaortic pressure gradient: 56.5 mmHg [IQR 46.8-67.8]; aortic valve area: 0.73 cm2 [IQR 0.61-0.88]; indexed stroke volume: 47.7 ± 1.3 mL/m2 (11 patients with low-flow AS), preserved LV ejection fraction (EV) (LVEF: 56.0% [51.0-61.3]; GLS: -14.5% [IQR -16.1- -10.6]), with no previous coronary artery disease and no history of cardiomyopathy. Beyond complete transthoracic echocardiography, all patients underwent cardiac magnetic resonance for LV myocardium tissue characterization. As proposed for AS, LV systolic pressure was corrected adding the mean transaortic pressure gradient to non-invasive systolic blood pressure cuff measurement in the echocardiographic algorithm. Four LVMW indices were collected in 83 patients (patients excluded for atrial fibrillation, left bundle branch block or absence of non-invasive blood pressure registration) and correlated to LV function indexes, LV hypertrophy and remodeling, myocardial tissue characterization, BNP and troponin levels (Pearson or Spearman correlation). These same indexes were compared in patients with LV ejection fraction (EF) below and above 50%, normal and reduced flow and presence of replacement fibrosis.
Results: Global constructive work (GCW) (2,658.6 ± 76.4 mmHg%), global myocardial work (GMW) (2,218.7 ± 74.9 mmHg%) and global wasted work (GWE) (262.0 mmHg% [198.8-339.5]) were high above normal with concomitant lower work efficiency (WE) (88.0% [83.2-91.8]. Weak correlations were found between LVMW indexes and parameters describing aortic valve severity, flow and LV function (table). Except for significant differences of LVMI in patients with reduced LV ejection fraction (GCW 2,770.3 ± 687.4 vs 2,056.0 ± 380.7 mmHg%, p = 0.014 and GMW 2,362.5 ± 657.9 vs 1,621.3 ± 319.9, p = 0.021 in patients with LV EF > 50% vs. LV EF< 50%, respectively) work indexes were neither significantly different in low-flow patients nor in those with myocardial late gadolinium enhancement.
Conclusions: Global constructive and myocardial work are increased in these patients with severe aortic stenosis. This might reflect an increased afterload predominance rather than a LV functional impairment, particularly relevant in this group of patients with exclusive high gradient disease and preserved LVEF.

CO 31. ASSESSING PROPORTIONATE AND DISPROPORTIONATE FUNCTIONAL MITRAL REGURGITATION WITH INDIVIDUALIZED THRESHOLDS OUTPERFORMS THE RISK STRATIFICATION PROPOSED BY CURRENT GUIDELINES

Pedro M. Lopes, Francisco Albuquerque, Pedro Freitas, Francisco Gama, Eduarda Horta, Carla Reis, João Abecasis, Marisa Trabulo, António M. Ferreira, Carlos Aguiar, Manuel Canada, Regina Ribeiras, Miguel Mendes, Maria J. Andrade

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

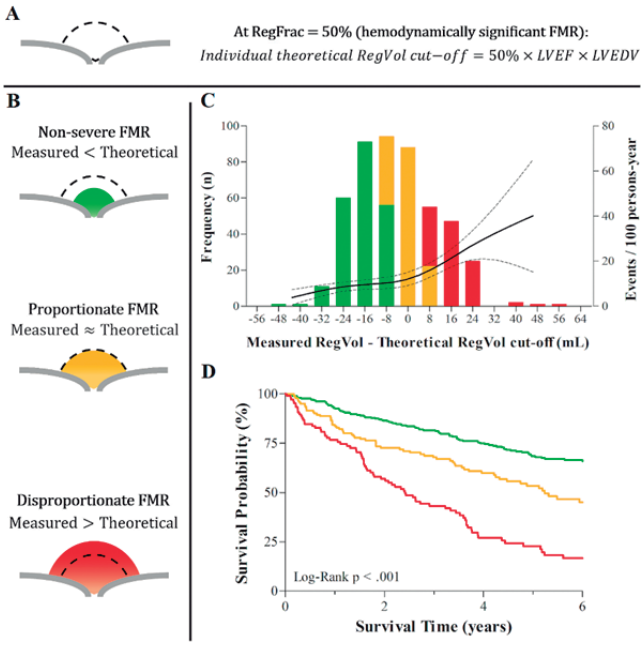
Introduction: The clinical application of the concept of Proportionate and Disproportionate Functional Mitral Regurgitation (FMR) has been limited by the lack of a simple way to assess it. The aim of our study was to evaluate the prognostic value of an individualized method of assessing FMR Proportionality and to compare it with current established guidelines.
Methods: Patients with at least mild FMR and reduced left ventricular ejection fraction (LVEF < 50%) under guideline-directed medical therapy

		r (correlation coefficient)	p-value			r (correlation coefficient)	p-value
GLS	GCW	-0.406	0.000	AVA	GCW	-0.016	0.887
	GMW	-0.389	0.001		GMW	0.013	0.907
PDS	GCW	-0.198	0.095	AVmean	GCW	0.237	0.033
	GMW	-0.046	0.703		GMW	0.212	0.049
LVEF	GCW	0.492	0.000	NT- pro BNP	GCM	-0.016	0.887
	GMW	0.534	0.000		GMW	-0.035	0.763
SVi	GCW	0.451	0.000	Troponin	GCW	-0.238	0.041
	GMW	0.434	0.000		GMW	-0.213	0.070
Indexed Mass [CMR]	GCW	-0.068	0.556	Zva	GCW	-0.236	0.035
	GMW	-0.073	0.428		GMW	-0.239	0.034

Correlations between left ventricle myocardial work and parameters describing Left ventricle function and flow (GLS [global myocardial strain]; PDS [mechanical dispersion]; LVEF [left ventricle ejection fraction]; SVi [indexed stroke volume]; indexed LV Mass CMR [cardiac magnetic resonance]; NT-pro BNP; Troponin, aortic valve severity (AVA [aortic valve area]; Avmean [mean transaortic gradient]) and Zva [valvuloarterial impedance].

CO 32 Figure

were retrospectively identified at a single-center. Considering regurgitant fraction ≥ 50% as the threshold for hemodynamically significant FMR, an individualized theoretical regurgitant volume (RegVol) cut-off can be derived by a simple equation that accounts for LV dilation and dysfunction (Figure panel A). Accordingly, the difference between the measured RegVol and the individual theoretical RegVol cut-off can be used to categorize FMR proportionality as non-severe, proportionate or disproportionate (Figure panel B). The discriminative ability (area under the ROC curve-AUC) of FMR proportionality status was compared against the European and American guidelines. Integrated discrimination improvement (IDI) was used to ascertain if FMR disproportionality improves individual risk stratification provided by both guidelines. The primary endpoint was all-cause mortality. **Results:** A total of 572 patients (median age 70 years; 76% male) were included. Median LVEF was 35% (IQR 28-40) and LVEDV was 169 ml (IQR 132-215). Disproportionate FMR was present in 109 patients (19%), Proportionate FMR in 148 patients (26%) and Non-Severe FMR in 315 patients (55%). During a median follow-up of 3.8 years (IQR 1.8-6.2), 254 patients died. The unadjusted mortality incidence per 100 persons-year (black line, Figure panel C) and the survival probability (Figure panel D) worsened as the degree of FMR disproportionality increased. On multivariable analysis, disproportionate FMR remained independently associated with all-cause mortality (adjusted HR: 1.79; 95%CI: 1.25-2.55; p = 0.001). The FMR proportionality concept showed greater discriminative power (AUC 0.64; 95%CI: 0.60-0.68) than the American (AUC 0.58; 95%CI: 0.55-0.62; P for comparison < 0.001) and European guidelines (AUC 0.58; 95%CI: 0.55-0.62; P for comparison < 0.001). When added to any of these guidelines, FMR proportionality also improved risk stratification by reclassifying patients into lower and higher risk subsets (IDI = 0.037 [p < 0.001] and 0.034 [p < 0.001], respectively).



Conclusions: Disproportionate FMR assessed by an individualized method was independently associated with an increased risk of all-cause mortality. When added to the American and European guidelines, FMR proportionality also improved risk stratification by reclassifying patients into lower and higher risk subsets.

CO 29. EPIDEMIOLOGY OF INFECTIVE ENDOCARDITIS IN PORTUGAL, A POPULATIONAL STUDY

Catarina Sousa[1], Paulo Nogueira[2], Fausto J. Pinto[2]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário. [2]Faculdade de Medicina da Universidade de Lisboa.

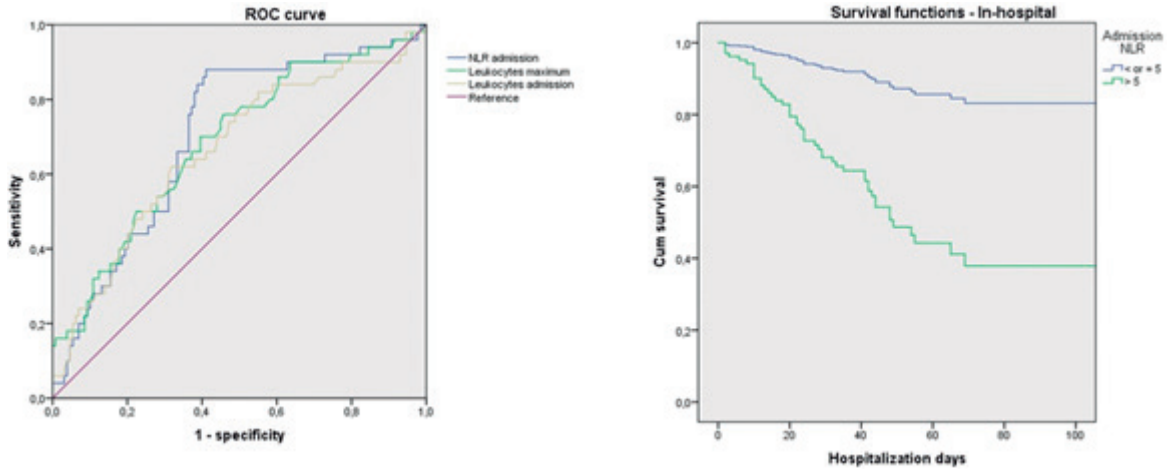
Introduction: Nationwide series have contributed to a reliable assessment of the changing epidemiology of infective endocarditis, even though conclusions are not uniform.
Objectives: We sought to use a recent populational series to describe the temporal trends on the incidence of infective endocarditis, its clinical and outcome results, in Portugal.
Methods: A nationwide retrospective temporal trend study on the incidence and clinical characterization of patients hospitalized with infective endocarditis, between 2010 and 2018, in Portugal.
Results: 7,574 patients were hospitalized with infective endocarditis from 2010 to 2018 in Portuguese public hospitals. The average length of hospitalization was 29.3 ± 28.7 days, predominantly men (56.9%), and 47.1% had between 60 and 79 years old. The most frequent infectious agents involved were Staphylococcus (16.4%) and Streptococcus (13.6%). During hospitalization, 12.4% of patients underwent heart valve surgery and 20% of the total cohort died. The annual incidence of infective endocarditis was 8.31 per 100,000 habitants, being higher in men and increased with age. In-hospital mortality rate significantly increased during the analyzed period, the strongest independent predictors being ischemic or hemorrhagic stroke, sepsis, acute renal failure and older age.
Conclusions: In Portugal, between 2010 and 2018, the incidence of infective endocarditis presented a general growth trend with a deceleration in the most recent years. In addition, a significant rate of in-hospital complications, a mildly lower than expected stable surgical rate and a still high and growing mortality rate were observed.

CO 28. PROGNOSTIC ROLE OF NEUTROPHIL-LYMPHOCYTE RATIO IN INFECTIVE ENDOCARDITIS: A SIMPLE PREDICTOR FOR A COMPLEX DISEASE?

João Gameiro, André Freitas, Diana Campos, Carolina Saleiro, José Sousa, Ana Rita Gomes, Luís Puga, Eric Monteiro, Gonçalo Costa, Joana Silva, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra.

Introduction: Infective endocarditis (IE) is a infectious disease with high morbidity and mortality. Because of its complex and heterogeneous nature, identifying high risk patients is both challenging and crucial. The neutrophil-to-lymphocyte ratio (NLR), as an inexpensive and easily accessible inflammatory marker, is gaining interest as an independent predictor of worse prognosis in some infectious and cardiovascular diseases. Whether NLR can have a prognostic role in IE is still under investigation.
Objectives: The purpose of this study is to assess and compare, in patients (P) with IE, the prognostic value of 3 variables: NLR at hospital admission, total number of leukocytes at hospital admission and the highest total number of leukocytes during hospital stay.
Methods: A retrospective cohort study from consecutive P diagnosed with definite IE (Duke criteria), admitted to our cardiology ward between January 2010 to December 2020. Baseline clinical data and in-hospital mortality were determined. Receiver operating characteristic (ROC) curves and area under curve (AUC) were calculated for the 3 variables and used for comparison. The cut-off value for the NLR was derived from the Youden index. Predictors of in-hospital mortality and time to the first event were analysed using logistic regression and survival analysis with multivariate Cox regression model.
Results: A total of 262 P were included (70.6% male sex, mean age of 63.8 ± 15). In this cohort, the mean length of stay was 38 ± 27 days. A prosthetic valve was present in 30 % of P and an implanted device in 26% of P. The aortic valve was the most affected valve (43.5%). In 50.8 % of P, blood cultures were positive. The most common organism was Staphyloccocus aureus (19.1%). P were referred to cardiac surgery in 29% of cases. The mean level of NLR in this cohort was 10.67 ± 8. In-hospital mortality in our study was 30.5%. The NLR at admission yielded an acceptable prognostic performance in predicting in-hospital death using ROC analysis (AUC: 0.705, 95%CI: 0.621-0.789, p < 0.001) and performed better than the other variables in predicting death (total number of leukocytes at hospital admission: AUC: 0.665, p = 0.001; highest total number of leukocytes during hospital stay: AUC: 0.684, p < 0.001). A NLR of 5 was suggested as a predictive cut-



CO 28 Figure

off by the Youden index calculated with this analysis. After dividing our cohort in two groups (NLR ≤ 5 and NLR > 5), we used a multivariate Cox regression analysis adjusted to confounding factors (age, gender, multiple cardiovascular risk factors and other typical IE prognostic factors) that demonstrated a significant statistical impact of NLR > 5 on hospital mortality (HR adjusted: 5.257; p = 0.001).

Conclusions: NLR at admission is an easy to calculate marker with good capacity to predict in-hospital mortality. A NLR level > 5 was significantly associated with higher in-hospital mortality.

CO 30. REGURGITANT VOLUME TO LEFT VENTRICULAR END-DIASTOLIC VOLUME RATIO: THE QUEST TO IDENTIFY DISPROPORTIONATE MR IS NOT OVER

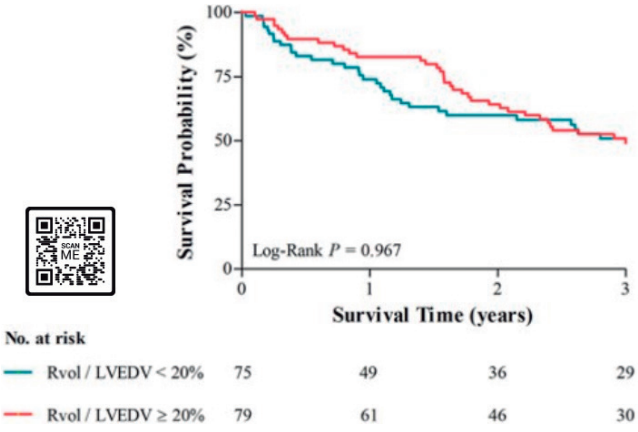
Francisco Albuquerque, Pedro M. Lopes, Pedro Freitas, Eduarda Horta, Carla Reis, António m. Ferreira, João Abecassis, Marisa Trabulo, Manuel Canada, Regina Ribeiras, Miguel Mendes, Maria João Andrade

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Quantification of secondary mitral valve regurgitation (SMR) remains challenging. Proportionate and Disproportionate SMR provides a conceptual framework that relates the degree of SMR to left ventricular dilatation and dysfunction. In line with this concept, regurgitant volume to LV end-diastolic volume ratio (Rvol/LVEDV) was recently proposed as a possible strategy to identify patients with Disproportionate SMR. The aim of this study was to validate this approach in a Portuguese cohort.

Methods: In a single center cohort of patients with heart failure and reduced left ventricular ejection fraction (HFrEF < 50%) under optimal guideline-directed medical therapy (GDMT), we retrospectively identified those with at least moderate SMR. According to the published literature, we divided the study population into 2 risk groups: those with a Rvol/LVEDV ratio ≥ 20% (greater MR/smaller LVEDV) and those with a ratio < 20% (smaller MR/larger EDV). Cox regression and Kaplan-Meier survival analysis were used to assess the association between Rvol/LVEDV ratio and all-cause mortality.

Results: A total of 154 patients (mean age 69 ± 12 years; 81% male) were included. Mean LVEF was 31 ± 8% and median LVEDV was 193 mL (IQR: 155 to 236 mL). There were 74 patients (48.1%) with a Rvol/LVEDV ratio < 20% and 80 patients (51.9%) Rvol/LVEDV ratio ≥ 20%. Regarding GDMT, 141 (91.6%) received beta-blockers, 139 (90.3%) angiotensin converting-enzyme inhibitors/angiotensin receptor blockers and 77 (50.0%) were under mineralocorticoid therapy. Also, there were patients 49 (31.8%) under cardiac resynchronization therapy and 40 patients (26.0%) had an implantable cardioverter defibrillator. During a median follow-up of 2.1 years (IQR 0.7 to 3.8 years), 92 (59.7%) patients died. Cox regression and survival analysis showed no mortality difference between patients with a Rvol/LVEDV ratio < 20% and those with a ratio ≥ 20% (HR: 1.04; 95%CI 0.69-1.57; p = 0.854; Log-rank p = 0.967)-see also figure.



Conclusions: In a Portuguese cohort of HFrEF patients under optimized GDMT and with at least moderate SMR, the Rvol/LVEDV ratio was not associated with an increased risk of all-cause mortality. As such, the Rvol/LVEDV ratio does not seem to be a reliable surrogate of Disproportionate SMR, possibly because it does not account for the degree of LV dysfunction.

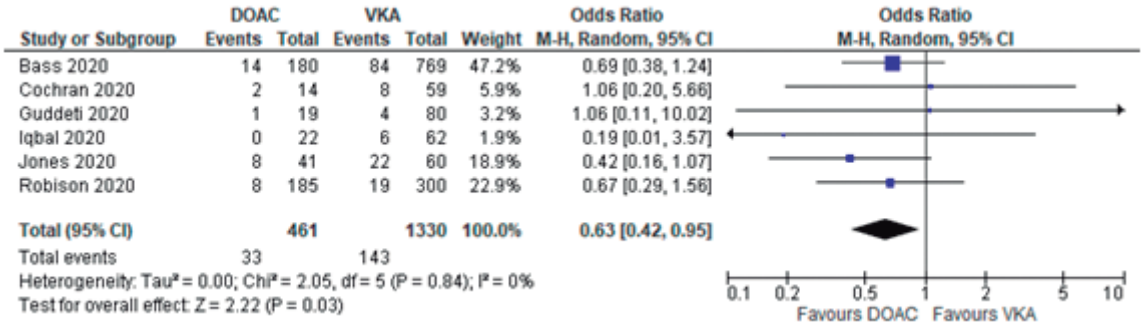
Sexta-feira, 30 Abril de 2021 | 16H30-17H30

Sala Virtual 2 | CO 25- Miscelânea

CO 133. DIRECT ORAL ANTICOAGULANTS COMPARED WITH VITAMIN K ANTAGONISTS FOR LEFT VENTRICULAR THROMBI: AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

Gonçalo Ferraz Costa[1], Carolina Saleiro[2], Vanda Devesa Neto[3], Lino Gonçalves[4], Rogério Teixeira[4]

[1]Centro Hospitalar e Universitário de Coimbra. [2]Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral. [3]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio, EPE. [4]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.



CO 133 Figure

Introduction: Left ventricular thrombus (LVT) is a frightening complication primarily occurring in patients with LV dysfunction following large myocardial infarction. The role of direct oral anticoagulants in this clinical setting remains controversial.
Objectives: To compare DOACs versus vitamin K antagonists (VKA) in LVT treatment.
Methods: We systematically searched PubMed, Embase and Cochrane databases, in January 2020, for interventional or observational studies comparing DOAC with VKA on LVT treatment.
Results: Seven retrospective studies were included, providing a total of 1,791 patients, 461 patients on DOACs and 1,330 on VKA. In terms of efficacy, our meta-analysis revealed a similar rate of LVT resolution (pooled OR 0.78 [0.55, 1.09], p = 0.14, I^2 = 0%) and systemic embolism (pooled OR 1.13 [0.54, 2.40], p = 0.74, I^2 = 51%), although with moderate heterogeneity in the latter. Nevertheless, regarding total bleeding events, DOAC presented a significant reduction of events (pooled OR 0.63 [0.42, 0.95], p = 0.03, I^2 = 0%).
Conclusions: Our pooled data suggests DOACs as a safer approach to LVT, with no significantly reduced efficacy on LVT reduction.

CO 130. LEFT VENTRICLE REMODELLING AND MECHANICAL IMPROVEMENT AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY

Lígia Mendes[1], Isabel[1], Vasco Atalaia[1], Raquel Seiça[2], Hans Eickhoff[2]

[1]Hospital da Luz Setúbal/Santiago. [2]Instituto de Fisiologia da FMUC.

Introduction: Although obesity is a well-recognized risk factor for heart failure with preserved ejection fraction and weight loss improves prognosis underlying mechanisms are not yet completed understood.
Objectives: We studied the modification of mechanical deformation and workload of the left ventricle after weight loss in the wake of laparoscopic sleeve gastrectomy (LSG).
Methods: Fourteen female patients undergoing LSG for standard indications were enrolled. All subjects underwent a physical examination with biometric evaluation, a glucose tolerance test, homeostatic model assessment of insulin resistance (HOMA-IR), and a comprehensive echocardiography performed according to the EACVI recommendations before surgery (0M) and 6 months post-operatively (6M). All values are presented as mean with standard deviation. Pre-and postoperative time points were compared using a paired t-test.

Variables	0 M	6 M	p value
Left ventricle volume (mL)	106 ± 20	114 ± 25	0.071
Left atrium (mL)	72 ±15	70 ± 14	0.477
FEVE (%)	61± 5	61 ± 5	0.85
Relative thickness of the wall	0.41 ± 0.08	0.32 ± 0.05	0.001
E' septal	9± 2.9	11 ± 3.2	0.012
E' lateral	13 ± 3.5	14.8 ± 3.7	0.044
Global longitudinal strain GLS (%)	17 ± 2.4	19 ± 2.2	0.003
Global Work Efficiency GWE (%)	93 ± 2.7	96 ± 1.6	0.007

Results: Mean weight loss was 29 ± 5.6 Kg (p < 0.0001), systolic blood pressure decreased by 24 ± 16 mmHg (p < 0.0001), and mean heart rate by 9 ± 5 bpm (p < 0.0001). HOMA-IR decreased from 5.2 ± 2.6 to 1.8 ± 1.6 (p = 0.0001). Echocardiographic variables are shown in the table.
Conclusions: LSG induced significant weight loss at 6 months, decreased insulin resistance and improved left ventricle myocardial work efficiency. This last finding, the increase in GWE, was primarily driven by the increment in the longitudinal deformation, since there was a decrease in the afterload.

CO 134. SINDROME MULTISSISTÉMICA PEDIÁTRICA TEMPORALMENTE ASSOCIADO A INFEÇÃO SARS-COV2: ESTUDO DE SEIS CASOS

Marta Novo[1], Luís Salazar[2], Carla Teixeira[2], Alexandre Fernandes[2], Laura Marques[2], Daniel Meireles[2], Alzira Sarmento[2], Filipa Vila-Cova[2], Mariana Magalhães[2], Marília Loureiro[2], Sílvia Alvares[2]

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Introdução: A infeção SARS-CoV2 pode estar temporalmente associada à emergência de uma entidade pediátrica de inflamação multissistémica e choque (Sindrome Multissitémico Pediátrico Temporalmente Associado a Infeção SARS-CoV2, PIMS-TS) que pode apresentar semelhanças à Doença de Kawasaki (KW) e choque tóxico.
Métodos: Foi realizado um estudo descritivo restrospectivo dos doentes com < 18 anos, admitidos em internamento de hospital nível III desde 1 Outubro de 2020 até 15 Janeiro de 2021, que cumpriam critérios de diagnóstico para PIMS-TS da OMS. Analisaram-se dados demográficos, comorbilidades, sintomas, fenótipo associado, investigação analítica/imagiológica, complicações e tratamento.
Resultados: Dos 151 doentes diagnosticados com COVID-19/infeção SARS-CoV2, 36 (23,8%) necessitaram de internamento hospitalar, dos quais 6 (4,0%) cumpriam critérios de diagnóstico PIMS-TS com idade média de 10 anos (5-15 anos), 4 (66%) do sexo masculino e 3 (50%) apresentavam comorbilidades (estenose pulmonar valvular ligeira e asma). 3 casos com PCR positiva a SARS-Cov2 (50%), 3 com serologia IgG positiva e todos com história prévia de contacto com Covid19. Três casos (50%) com fenótipo de Kawasaki-like (2 completo e 1 incompleto com choque cardiogénico). Na apresentação todos tinham febre e hiperémia conjuntival; 83% com exantema, 50% com mucosite, 33% com adenopatias (33%) e 16% edema das mãos. Os sintomas gastrointestinais estavam presentes em 66%. Analiticamente todos apresentavam elevação da proteína C-reactiva e da ferritina, 5 (50%) com elevação da velocidade de sedimentação. Todos com elevação do NT-proBNP, D-dimeros e fibrinogénio, 4 (66%) com elevação da Troponina T. Três (50%) com admissão na UCIP por choque/hipotensão (50%), necessidade de suporte inotrópico (33%), derrame pericárdico (50%), miocardite (33%). Nenhum caso com dilatação/aneurisma das artérias coronárias e 1 com hipertrofia concêntrica do ventrículo esquerdo transitória. IgIV, corticoterapia e antibioterapia em todos os casos e ácido acetilsalicílico em 2 (33%). Tempo médio de internamento hospitalar 10 dias e não se registou nenhum óbito.
Conclusões: PIMS-TS foi recentemente reconhecido e surge 3-4 semanas após infeção SARS-CoV2. É grave e potencialmente fatal. Não se correlaciona com

a gravidade da clínica aguda da infeção viral e pode ocorrer após infeções assintomáticas. O diagnóstico e tratamento precoces são fundamentais para controlar a imunodesregulação multiorgânica, mas com acentuado cardiotropismo. É necessário um elevado índice de suspeição e averiguar a história epidemiológica dos contactos, porque PCR SARS-CoV2 pode ser negativa como vemos nesta série.

CO 131. AVALIAÇÃO DA CAPACIDADE FUNCIONAL POR TESTE DE MARCHA APÓS INFEÇÃO POR COVID 19

Débora Repolho, Filipa Ferreira, Sofia Alegria, Alexandra Briosa, Maria José Loureiro, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introdução: COVID 19 é uma infeção nova e complexa, a evidência disponível sugere que muitos doentes (dts) após a cura mantém limitações associadas à doença, em especial dts que necessitaram de hospitalização.
Objetivo: Caracterizar a população de dts infetados com COVID 19 que necessitaram de internamento superior a cinco dias, analisar se houve impacto na capacidade funcional através de teste de marcha dos 6 minutos (TM6M) e verificar se existe associação entre os resultados obtidos no teste de marcha com os sintomas percecionados três a seis meses após a cura, subdividindo os doentes de acordo com a existência de sintomas.
Métodos: Estudo prospetivo, quantitativo e transversal que incluiu todos os doentes infetados com SARS-COV2 que necessitaram de internamento superior a cinco dias e que realizaram TM6M três a seis meses após a cura, dividindo os dts em dois grupos: grupo (G) 1-dts que referem queixas/limitações após a cura; G2-restantes dts.
Resultados: De 06/20 a 12/20, foram incluídos 25 dts, idade média 55 anos, 52% sexo masculino. O tempo médio de internamento foi de 20 dias, 72% dos dts referiam sintomas, sendo os mais frequentes mialgias (32%) e cansaço (60%). O valor médio do TM6M foi 436 ± 115 m, 83,4% do valor previsto e apenas 29% realizou um valor previsto inferior a 75%. A saturação basal foi >94% em todos os doentes; nenhum recebeu oxigénio suplementar durante o teste e nenhum dos testes foi interrompido precocemente. Observou-se no pico de esforço dessatauração em 80% dos dts, com o valor médio de 2,6 ± 3,5% e foi ≥ 4% em 36% dos dts, 40% referiram um índice fadiga na escala de Borg ≥ 5. A distância percorrida no teste de marcha não diferiu significativamente entre os grupos (430 *versus* 451 m, respetivamente p = 0,695) e não foi encontrada associação entre o valor absoluto de metros percorrido pelos dts no TM6M e a perceção de sintomas (χ^2 = 121,87, p = 0,435), no entanto foi possível encontrar associação entre a dessaturação no pico de esforço e a perceção de sintomas (χ^2 = 117,18 p = 0,02).
Conclusões: Os resultados obtidos confirmam que uma percentagem significativa de doentes após a cura mantem sintomas após infeção por SARS-COV2, sendo os mais comuns mialgias e cansaço. Embora a capacidade funcional quando avaliada por TM6M não se encontre comprometida, foi possível encontrar associação entre a dessaturação no TM6M e a perceção de sintomas. São necessários mais estudos para confirmação destes resultados e para compreender os mecanismos e as implicações prognósticas destes achados.

CO 132. CATH LAB ACTIVITY DURING COVID-19 PANDEMIC: REPORT FROM ONE CENTRE

João Baltazar Ferreira, Daniel Faria, Inês Fialho, Marco Beringuilho, Mariana Passos, Joana Lopes, Miguel Santos, Pedro Farto e Abreu, Carlos Morais

Hospital Prof. Doutor Fernando Fonseca.

Introduction: Covid-19 pandemic broadly influenced the clinical activity during the year of 2020 worldwide. In Portugal, the first case was reported on the beginning of March, and given the following rising number of infection cases, the state of emergency was declared. It was again declared from November on following a new raise of the number of infection cases. We therefore consider there were 2 major waves of Covid-19 in Portugal. We aim to investigate how the pandemic waves may have interfered with the cath lab activity in our centre.
Methods: We retrospectively analyzed data from cath lab procedures from the beginning of 2016 to the end of 2020. We compared data from the months of the 2 major waves of Covid-19 in Portugal (March-April and November-December) with baseline data from 2016 to 2018 (we did not considered data from 2019 for baseline purposes because there were several months of inactivity on that year due to technical equipment failures).
Results: There was a reduction on global cath lab activity during both pandemic waves compared to baseline, but it was only statistically significant on the first wave (142 and 183 procedures for first and second wave respectively, with a 34.3% (p < 0.001) and 14.8% (p = 0.11) global reduction respectively compared to baseline monthly activity. The most significant reduction on procedures on first wave was from programmed ambulatory procedures (12.7% vs 23.8% baseline, p = 0.002); that reduction was not observed on the second wave where ambulatory patients represented 31.15% of total procedures. There was no significant difference on the proportion of angioplasty procedures on both waves (51.8 and 51.1% vs 50.3% baseline; p = 0.79 and p = 0.88). There was not a significant difference on proportion of ST-elevation myocardial infarction (STEMI) patients on both waves (23% and 21.3% vs 18.8% baseline; p = 0.22 and p = 0.4). Also regarding STEMI patients from first pandemic wave there was no significant differences on severity at presentation (considering as severe those patients presenting with Killip class III or IV) (3.1% vs 6.6% baseline, p = 0.23). Demographic patient characteristics were similar, as there was not a significant difference of mean age on patients admitted in both waves (mean age 66.57 and 67.34 years vs 65.97 years baseline, p = 0.57 and p = 0.15).
Conclusions: Covid-19 pandemic influenced broadly the global clinical activity, and the activity of the cath lab was no exception. Although there were less overall procedures, that difference was more evident and significant during the first wave of pandemic, and especially regarding ambulatory procedures. Several adaptation efforts were made after the first wave, which reflected positively on the second wave. Therefore, this reinforce the importance for prompt and efficient responses in cases of future pandemic, in order to preserve to the maximum the care of these patients.

Sexta-feira, 30 Abril de 2021 | 11H45-12H45

Sala Virtual 2 | CO 08 - Insuficiência cardíaca crónica

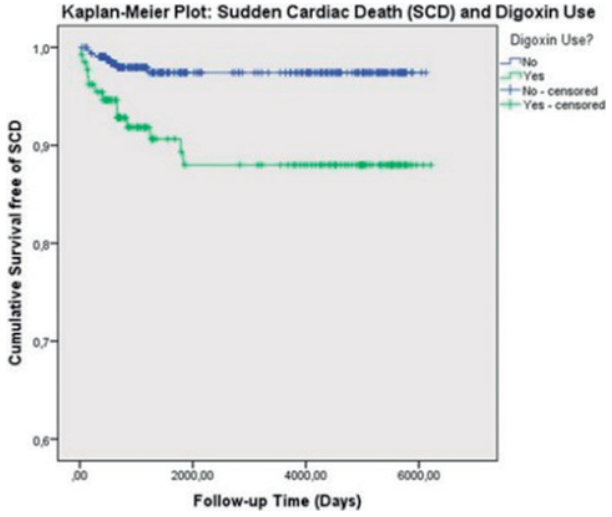
CO 40. PROGNOSTIC IMPACT OF DIGOXIN USE IN A HEART FAILURE POPULATION

Ana Rita Teixeira, João Ferreira Reis, António Valentim Gonçalves, Pedro Brás, Rita Ilhão Moreira, Tiago Pereira da Silva, Ana Timóteo, Rui M. Soares, Bárbara Teixeira, Sofia Jacinto, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Objectives: Digoxin (D) may be considered in patients (pts) in sinus rhythm with symptomatic HFrEF to reduce the risk of hospitalization and in pts with HFrEF and atrial fibrillation (AF) for rate control. There are some controversies regarding its safety in this population, with some studies suggesting a higher risk of events, while others showed no deleterious effect on mortality.
Methods: Prospective evaluation of adult pts with HFrEF submitted to CPET in a tertiary centre. Pts were followed up for at least 1 year for the primary endpoints of cardiac death, urgent heart transplantation/ventricular assist device implantation in the first year of follow-up (MH1) and sudden cardiac death (SCD). Univariate followed by Cox multivariate regression analysis were performed to evaluate the impact of D use in the study's endpoints. Survival analysis was performed using Kaplan-Meier plots.

Results: CPET was performed in 487 HRrEF pts, with a mean age of 56.3 ± 12.5 years, of which 79.1% were male, 46.3% of ischemic aetiology (IA), with a mean LVEF of 30.4 ± 7.6%, a mean heart failure survival score (HFSS) of 8.6 ± 1.1. At baseline, 134 (29.3%) pts were receiving D. These pts presented lower LVEF (26.7% vs 30.9%, p < 0.001), HFSS (8.3 vs 8.7, p < 0.001) and sodium values (137.0 vs 138.3, p < 0.001), a lower prevalence of coronary artery disease (38.8% vs 49.2%, p = 0.042), but a higher prevalence of AF (38.8% vs 19.8%, p < 0.001). There was no difference regarding patient's age, prevalence of chronic kidney disease (CKD), peak oxygen uptake (pVO2) or VE/VCO2 slope values. Baseline D use was independently associated with an increased risk of SCD in our population (HR: 3.45; 95%CI 1.28-9.27, 0.014), as well as in pts of IA (HR: 4.45, 95%CI 1.25-15.83, p = 0.014) and with CKD (HR: 15.57, 95%CI 1.97-123.02, p = 0.009). There was no association with SCD in pts of non-ischemic aetiology, preserved renal function and AF. Pts taking D presented a significantly higher incidence of SCD (log rank p < 0.001). D use was not independently associated with MH1 in the general population (p = 0.122 in multivariate analysis), but it was in pts of IA (HR: 4.94, 95%CI 1.32-18.39, p = 0.017).



Conclusions: In our HF population, D use was an independent predictor of SCD, particularly in pts with coronary artery disease and CKD.

CO 41. SARCOPENIA IN HEART FAILURE: WHEN THE IMAGE HOLDS MORE THAN THE BLOOD

Mariana Sousa Paiva, Gonçalo Cunha, Pedro Freitas, Bruno Rocha, João Adriano Sousa, Sara Guerreiro, António m Ferreira, Carlos Aguiar, Miguel Mendes

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Sarcopenia (reduced muscular mass) is an ominous sign in patients (pts) with heart failure (HF). The aim of this study was to compare the prognostic value of 3 surrogate markers of sarcopenia in pts with HF and left ventricular ejection fraction (LVEF) < 50%: serum albumin, modified body mass index (mBMI), and area of pectoralis major muscles (PM).

Methods: This was a retrospective single-centre cohort study of pts with HF undergoing cardiac magnetic resonance imaging (CMR). The key exclusion criteria were LVEF > 50%, known neuromuscular disorders, hematologic malignancies and infiltrative diseases. Laboratory data were collected from electronic records up to 6 months from the CMR. By definition, mBMI was the product of body mass index (kg/m^2) by serum albumin (g/dL). To estimate sarcopenia, we considered the area of PM measured in CMR on standard axial images at the level of the carina (figure 1A). PM area was expressed as the difference between the pt's PM area and the mean PM area of a healthy cohort, expressed in standard deviations of the controls (z-score). The primary outcome was a composite of all-cause mortality or HF hospitalization.

Results: A total of 246 pts were included (mean age 63 ± 13 years, 76.8% male, 61% in NYHA II-III). We found a weak correlation between mean PM z-score and serum albumin, mBMI, serum creatinine (Pearson r = 0.258; 0.258; -0.015, respectively; p values 0.01 to 0.042). Over a median follow-up of 25 months, 59 pts had a primary outcome event. In univariable analysis, all of the 3 surrogate markers were able to predict the occurrence of events. However, after adjustment for serum creatinine, NT-proBNP, LVEF and gender, only the mean PM z-score retained statistical significance (HR 0.595, 95%CI 0.450-0.792, p = 0.005). Splitting the study population according to the best cut-off value for mean PM z-score yielded good risk stratification (figure 1B).

Conclusions: A simple measurement of muscular area in patients undergoing CMR seems to be an independent predictor of outcome in patients with HFrEF. In contrast, and despite their accessibility, serum albumin and mBMI add little prognostic value to well-defined markers.

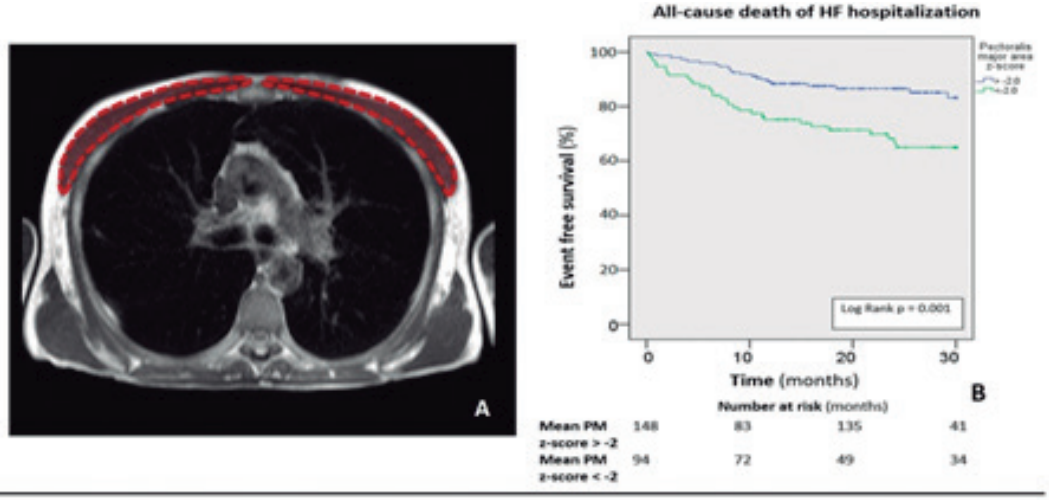


Figure 1A – Standard axial CMR image at the level of carina with pectoralis major muscles tracing. Figure 1B – Kaplan-Meier estimate curve for mean pectoralis major z-score of -2. In the ROC curve, -2 is the best cut-off(AUC 0.645), with a sensibility of 57.7% and a specificity of 65.4% to predict the ocurrence of the composite outcome in one year.

CO 41 Figure

CO 42. RECALIBRATING THE MECKI SCORE IN A PORTUGUESE COHORT OF PATIENTS WITH HEART FAILURE

Sérgio Maltês, Pedro Freitas, Bruno Ml Rocha, Gonçalo Jl Cunha, Catarina Brízido, Christopher Strong, António Tralhão, António Ventosa, António m Ferreira, Carlos MT Aguiar, Miguel Mendes

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

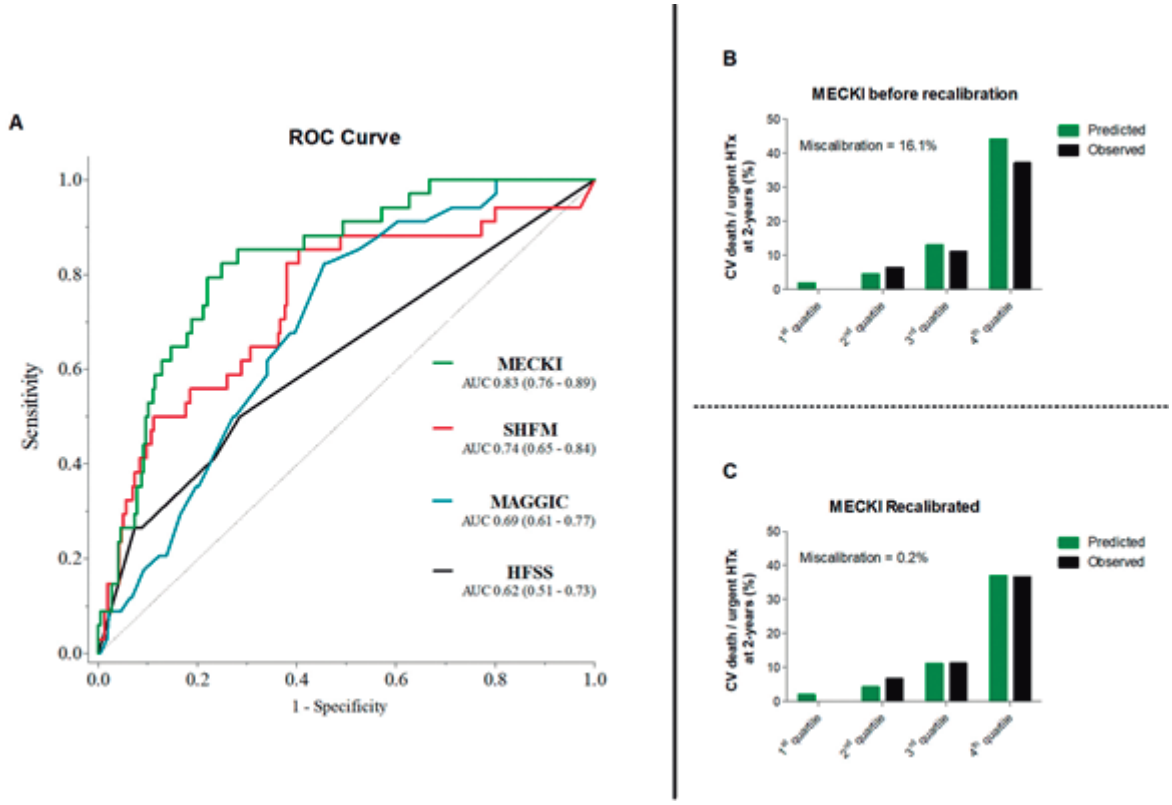
Introduction: Recalibration is often needed when applying new models to external populations where patient characteristics might be different. Risk assessment in the setting of advanced heart failure (HF) is particularly troublesome since critical decisions are often based on these models. The purpose of this study was to assess the performance of 4 different HF prognostic scores, and recalibrate the risk predictions of the best one in a Portuguese cohort.
Methodology: This is a single-center retrospective cohort of HF patients with reduced left ventricle ejection fraction (LVEF < 40%) undergoing cardiopulmonary exercise testing (CPET) between 2003 and 2018. Patients were excluded if they performed a suboptimal CPET (defined by a respiratory exchange ratio < 1.10). The Heart Failure Survival Score (HFSS), Seattle Heart Failure Model (SHFM), Meta-analysis Global Group in Chronic Heart Failure (MAGGIC), and Metabolic Exercise Cardiac Kidney Index (MECKI) were assessed for the discrimination ability (area under the ROC curve) to predict a combined endpoint of cardiovascular death or urgent Heart Transplantation (HTx) at 2-years. Calibration analysis was conducted, and logistical recalibration performed as needed.
Results: A total of 251 patients (mean age 57 ± 12 years; 79% male; 53% with ischemic HF) were included. Mean LVEF was 28 ± 6%. Over a 2-year follow-up period after CPET, 24 cardiovascular deaths occurred and 16 patients received an urgent HTx. There were no urgent LVADs implanted used in our population. The original MECKI score showed the best discrimination ability to predict 2-year risk of cardiovascular death or urgent HTx (AUC 0.83; 95%CI 0.76 to 0.89; p < 0.001)-see figure panel A. However, the original MECKI score tended to overestimate event occurence (overall miscalibration of 16.1%), especially in the highest risk subgroups-see figure panel B. After recalibration-see figure panel C-miscalibration diminished to 0.2%, allowing a more accurate prediction of CV death or urgent HTx at 2-years.
Conclusions: The MECKI score showed the best discriminative ability to predict CV death or urgent HTx at 2-years, but significantly overestimated the risk of events. This overestimation was corrected by recalibrating the model for our population. The newly calibrated MECKI score might prove useful for guiding decisions in Portuguese patients with advanced HF.

CO 43. RIGHT VENTRICULAR DYSFUNCTION IS A PREDICTOR OF NON-RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY

Tâmara Pereira, Pedro Von Hafe Leite, Geraldo Dias, Ana Filipa Cardoso, Mariana Tinoco, Olga Azevedo, Mário Lourenço, Sílvia Ribeiro, Francisco Ferreira, Victor Sanfins, António Lourenço

Centro Hospitalar do Alto Ave, EPE/Hospital da Senhora da Oliveira.

Introduction: Cardiac resynchronization therapy (CRT) has been of great benefit to many heart failure (HF) patients with reduced ejection fraction (EF) and intraventricular conduction delay. However, approximately 30% of patients fail to respond to CRT. We investigated baseline characteristics that might influence response to CRT.
Methods: We retrospectively enrolled 227 patients undergoing CRT implantation between 2013 and 2020 according to the guidelines. 118 patients were included in our analysis, from whom all data were available. Clinical, electrocardiographic and echocardiographic parameters were evaluated at baseline and 6 months after CRT implantation. Response to CRT was defined as an increase in left ventricular ejection fraction (LVEF) > 10%. Right ventricular systolic dysfunction (RVSD) was defined as S' velocity < 9.5 cm/s or tricuspid anular plane systolic excursion (TAPSE) < 17 mm. Chronic kidney disease (CKD) was defined as GFR < 60 ml/min/1.73 m^2.
Results: 118 patients were included (mean age 69 ± 11 years, 66.1% males, 39.8% ischemic etiology; 35.6% atrial fibrillation, baseline LVEF 27.6 ± 6%). After 6 months of CRT, 65 patients (55.1%) were considered responders. Responders were more frequently female than non responders (43.1% vs 22.6, p = 0.02).



CO 42 Figure

Atrial fibrillation and CKD were more prevalent in non responders (47.2% vs 26.2%, p = 0.018; 62.3% vs 21.5%, p < 0.001, respectively). RVSD was present in 60.4% of non responders vs 16.9% of responders (p < 0.001). In responder group, the mean S' velocity was 10.9 ± 2.1 cm/s vs 9.1 ± 2.1 cm/s in non responder group, p < 0.001. The mean TAPSE was also higher in responder group (20.3 ± 7.2 mm vs 16.5 ± 4.4 mm, p = 0.031). On multivariate analysis only RVSD (OR 7.754; 95%CI 2.968-20.282 p < 0.001] and CKD (OR 5.434; 95%CI 2.109-14.002; p < 0.001) were independently associated with non-response to CRT.
Conclusions: From a range of preoperative characteristics, multivariate analysis only identified RVSD and CKD as independent predictors of CRT response, with S' < 9.5 cm/s and TAPSE < 17 mm associated with non-response to CRT. This study highlights the importance of routine RV assessment in order to improve patient selection and optimize CRT response in heat failure patients.

CO 44. SACUBITRIL/VALSARTAN IN HFREF PATIENTS WITH LOW NT-PROBNP LEVELS-ANY BENEFIT?

Beatriz Silva [1], João Agostinho[2], Tiago Rodrigues[2], Nelson Cunha[2], Pedro Silvério António[2], Sara Couto Pereira[2], Joana Brito[2], Pedro Alves da Silva[2], Joana Rigueira[2], Nuno Lousada[2], Doroteia Silva[2], Fausto J. Pinto[2], Dulce Brito[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: PARADIGM-HF trial included patients (pts) with symptomatic heart failure (HF) with reduced ejection fraction (HFrEF) and NTproBNP levels above > 600 pg/mL or > 400 pg/mL if they had been hospitalized for HF within the previous 12 months. Data regarding therapy with sacubitril/valsartan (S/V) in pts with lower NTproBNP are lacking.
Objectives: To evaluate the clinical and prognostic effects of S/V in patients with HFrEF and low NTproBNP.
Methods: Nested case-control study of pts with HFrEF followed in HF Clinic and medicated with S/V. The study group (SG) was composed of pts with NTproBNp < 600 pg/mL or < 400 pg/mL if they had been admitted due to HF in the 12 months previous to S/V initiation; the control group (CG) was composed of pts with higher levels of NTproBNP. Groups were matched for NYHA, left ventricular ejection fraction (LVEF), age, estimated glomerular filtration rate (eGFR) and HF etiology. A ratio of 2 control group pts to 1 study group pt was used. The 2 groups were compared regarding clinical and prognostic variables after a follow up of 20 ± 12 months.
Results: 27 patients in a cohort of 191 HFrEF patients medicated with S/V met the SG criteria; the CG included 54 patients from the same cohort. At baseline, there were no differences regarding age, NYHA, LVEF, eGFR and HF etiology. Male gender was more prevalent in both groups (74 and 76%), median age was 65 years (IQR 55-71) and 67 years (IQR 57-74), respectively, and median LVEF was 28% (IQR 22-34) in the SG, and 30% (IQR 22-35) in the CG. The most frequent HF etiology was ischemic disease (59% in both groups). Most pts were in NYHA II (78 vs 82%). The median NTproBNP levels were 337 (IQR 238-396) pg/mL in the SG and 1,845 (IQR 1,074-3,251) pg/mL in the CG (p < 0.001). Although no patients from the SG died during the follow-up (vs 7 pts in the control group), there were no significant differences regarding hospitalization or mortality rates (p = NS). LVEF improved similarly in both groups (8 ± 9% vs 9 ± 13%; p = 0.712).There was a clinically significant improvement in NYHA functional class in both groups, but this improvement was more pronounced in the SG (48% of patients improved 1 NYHA functional class; 4% improved 2 classes) in comparison to the CG (28% of patients improved 1 class only) - p = 0.013. The safety profile of S/V was similar in both groups, with no differences in drug withdrawal between groups. A trend for higher doses of S/V use in the study group was observed: 16 (59%) pts in the SG tolerated 49/51 mg vs 20 (37%) pts in the CG, although the dose of 97/103 mg was attained similarly in both groups [5 (19%) pts in the SG vs 12 (22%) pts in the CG].
Conclusions: This study suggests that in patients with HFrEF, low levels of NTproBNP should not be used to define an indication to start S/V. Although not included in the ancillary trial (PARADIGM-HF), pts with low levels of NTproBNP showed a better functional improvement and attained prognostic benefit similar to pts with higher levels.

Sábado, 01 Maio de 2021 | 09H00-10H15

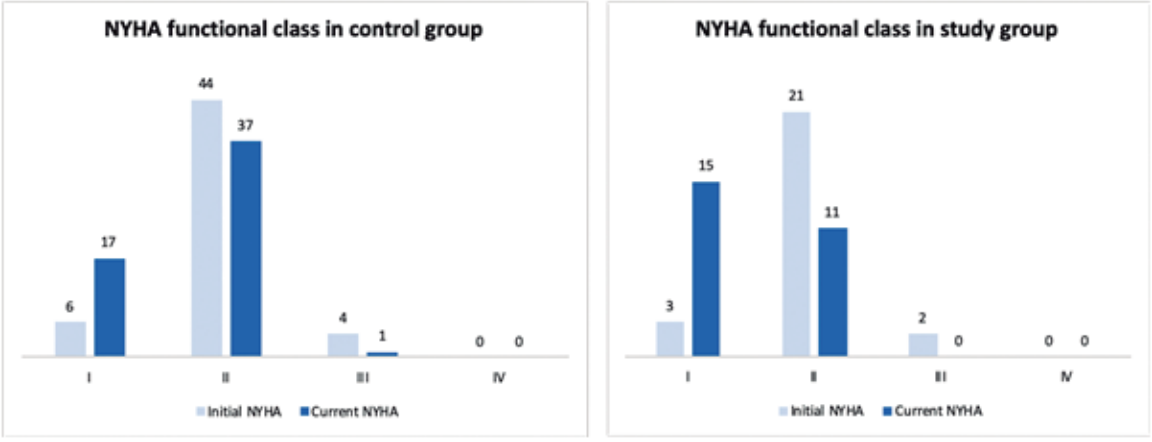
Sala Virtual 3 | CO 09 - Cardiologia Preventiva

CO 49. EPICARDIAL ADIPOSE TISSUE (EAT) VOLUME IS RELATED TO SUBCLINICAL ATHEROSCLEROSIS AND MAJOR ADVERSE CARDIOVASCULAR EVENTS (MACE) IN ASYMPTOMATIC SUBJECTS

Joao Adriano Sousa[1], Isabel Mendonça[1], Marina Santos[1], Margarida Temtem[1], Flávio Mendonça[1], Ana Célia Sousa[1], Mariana Rodrigues[1], Sónia Freitas[1], Eva Henriques[1], Sofia Borges[1], Graça Guerra[1], António Drumond[1], Roberto Palma dos Reis[2]

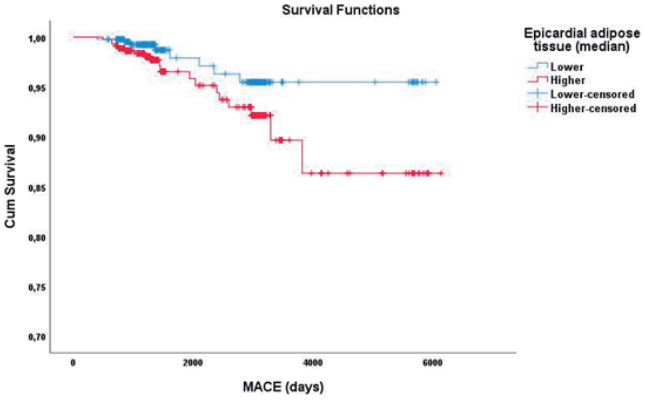
[1]Hospital Central do Funchal. [2]Nova Medical School.

Introduction: Epicardial adipose tissue (EAT) is an emerging cardiovascular risk marker. It has been suggested to be an inflammatory mediator with a



CO 44 Figure

role in subclinical atherosclerosis and coronary artery disease. However, its prognostic relevance in hard clinical outcomes remains thoroughly unexplored in the literature.
Objectives: Evaluate the prognostic relevance of EAT, regarding the occurrence of major adverse cardiovascular events (MACE) in an asymptomatic population.
Methods: 895 asymptomatic volunteers were prospectively enrolled in a single Portuguese center (mean age 51.9 ± 7.7, 78.5% male) and underwent a median follow-up time of 3.7 years (IQR 5.0). EAT volume was measured by Cardiac Computed Tomography (CCT) using a modified simplified method. Participants were distributed into two groups, above and below the EAT-volume median. We compared both groups regarding the occurrence of MACE through univariate analysis, Kaplan-Meier Survival curves and log-rank test. Association to subclinical atherosclerosis was addressed using correlation between EAT volume and calcium score (Agatson).
Results: There is a significant correlation between EAT volume and calcium score (r = 0.205, p < 0.0001) on non-contrast CCT scan, sustaining that it may play an important role in mediating coronary artery disease and subclinical atherosclerosis. Patients with higher EAT volume, were exposed to higher occurrence of MACE on follow-up [70.4% (19 of 27) vs 49.4% (429 of 868), p = 0.032] with a clearer separation of the curves after 5.7 years.



Conclusions: In an asymptomatic population, EAT volume seems to be related to subclinical atherosclerosis and to the occurrence of adverse cardiovascular events on long-term follow-up. Our study addresses some unanswered questions, such as the prognostic relevance of EAT as an emerging cardiovascular risk marker.

CO 45. HOW COST-EFFECTIVE IS THE CNIC POLYPILL FOR THE SECONDARY PREVENTION OF CARDIOVASCULAR AND CEREBROVASCULAR DISEASE IN PORTUGAL? AN ASSESSMENT OF ITS HEALTH- ECONOMIC VALUE

Gabriel Rubio Mercade[1], Carlos Aguiar[2], Francisco Araújo[3], David Carcedo[4], Tânia Oliveira[5], Silvia Paz[6], Jose Maria Castellano[7], Valentín Fuster[8]

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Introduction: The cardiovascular (CV) polypill strategy has proven to successfully reduce healthcare costs by decreasing the CV risk in secondary prevention patients. Previous pharmacoeconomic studies based the improvements in health outcomes on the increased adherence exerted by the CV polypill. Real-life clinical studies have now demonstrated the superiority of the CV polypill over usual care in positively modifying CV risk factors.
Objectives: To assess the cost-effectiveness of the CV polypill (aspirin 100 mg, atorvastatin 20/40 mg, ramipril 2.5/5/10 mg) compared to usual care-combination of individual components - to satisfactorily modify CV risk factors in patients with a history of coronary heart disease (CHD) or ischaemic stroke (IS) in Portugal.
Methods: A Markov cost-effectiveness model (payer perspective; direct medical costs; lifetime horizon) based on changes in CV risk factors obtained from a real-life study conducted in Mexico (limitation) was set for Portugal. The probability of transition between states was based on the SMART risk equation. Cost-effectiveness was calculated for a mixed cohort of post-CHD (representative of the population in the proACS registry) and post-IS patients (representative of the database of the Portuguese Ministry of Health's Central Administration for the Health System) (n = 1,000). Outcomes were costs (€2020) per life year (LY) and Quality Adjusted LY (QALY) gained. One-way (OWA) and probabilistic sensitivity analyses (PSA) tested the consistency of results.
Results: In the weighted population, the incremental cost reaches 607,053 €, 757,092 € for post-CHD and 394,539 € for post-IS. There are less subsequent CV events (90) and CV deaths (17) with the polypill compared to usual care in the overall population, as well as in post-CHD (CV events: 90, CV deaths: 16) and post-IS (CV events: 82.5, CV deaths: 16). The overall incremental cost-effectiveness ratio (ICER) is 5,508€/LY, or 6,519€/LY for CHD and 4,455€/LY for IS; and the incremental cost-utility ratio (ICUR) is 6,324€/QALY in the mixed cohort, and 6,320€/QALY for CHD and 6,378€/QALY for IS. Assuming a willingness-to-pay (WTP) threshold of 30,000 €/QALY gained, there is a 71% chance for the polypill being a cost-effective strategy compared to usual care and 24% of being cost saving.
Conclusions: The polypill is a cost-effective strategy in post-CHD and post-IS patients compared to the individual monocomponents in the secondary prevention of CV disease in Portugal.

CO 46. HOW TO COUNTERACT PHYSICAL INACTIVITY DURING COVID-19 PANDEMIC THROUGH A DIGITAL HOME-BASED MULTIDISCIPLINARY CARDIAC REHABILITATION PROGRAM?

Rita Pinto[1], Mariana Borges[2], Madalena Lemos Pires[2], Mariana Liñan Pinto[2], Catarina Sousa Guerreiro[2], Carla Rodrigues[3], Sandra Miguel[3], Olga Santos[3], Marta Ramalhinho[3], Edite Caldeira[3], Mariana Cordeiro Ferreira[3], Inês Ricardo[4], Nelson Cunha[4], Pedro Alves da Silva[4], Fausto J. Pinto[2], Ana Abreu[2]

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Introduction: Many centre-based cardiac rehabilitation (CR) programs have been forced to close during the first wave of COVID-19 pandemic. Resulting from the suspension of the centre-based CR programs, a major problem emerges regarding the potential harmful effects on the profound increase of physical inactivity and unhealthy lifestyle routines. Therefore, the development of alternative models to maintain access to CR programs and to avoid physical inactivity should be tested and delivered.
Objectives: To assess physical activity (PA) levels in patients with known cardiovascular disease (CVD) after completing 3-months of a home-based multidisciplinary digital CR program, an alternative model to the centre-based CR suspended program.
Methods: 116 patients with CVD (62.6 ± 8.9 years, 95 males) who were previously attending a face-to-face CR program were included and the following parameters were assessed at baseline and 3 months: self-reported PA and sedentary behaviour, adherence to the online CR program, cardiovascular and non-cardiovascular symptoms, safety and adverse events. The intervention consisted in an online multidisciplinary digital CR program including: exercise training sessions, educational sessions, psychological group sessions, risk factor control, nutritional and psychological consults and patient regular assessment.
Results: Ninety-eight CVD patients successfully completed the online assessments (15.5% drop-out). A significant increase was observed from moderate-to-vigorous PA (230 ± 198 min/week to 393 ± 378 min/week, p < 0.001) and a decrease of the sedentary time at 3-months (6.47 ± 3.26 hours/day to 5.17 ± 3.18 hours/day, p < 0.001). Almost 70% of the patients

met the PA recommendations and 41% reached more than 300 min/week of moderate-to-vigorous PA at 3 months. Forty-seven percent did at least more than one online exercise training per week and attended at least one of the online educational sessions. There were no major adverse events reported and only one minor non-cardiovascular event occurred.
Conclusions: Patients with CVD, who suspended their centre-based CR due to COVID-19 pandemic and started a home-based multidisciplinary digital CR program, had an improvement in PA levels and a decrease in sedentary time after 3 months. Therefore, home-based CR programs showed to be a good alternative option for selected clinically stable patients who cannot attend a centre-based CR program due to COVID-19 pandemic or other reasons.

CO 50. CARDIOVASCULAR RISK FACTOR CONTROL: IS IT POSSIBLE WITH A HOME-BASED CARDIAC REHABILITATION PROGRAM?

Nelson Cunha[1], Inês Aguiar-Ricardo[1], Tiago Rodrigues[1], Sara Couto Pereira[1], Pedro Silvério António[1], Pedro Alves da Silva[1], Beatriz Valente Silva[1], Beatriz Garcia[1], Rita Pinto[1], Madalena Lemos Pires[1], Mariana Borges[1], Alda Jordão[2], Carla Rodrigues[3], Fausto J. Pinto[1], Ana Abreu[1]

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Introduction: Cardiovascular risk factors (CVRF) control, needing different strategies, through patient education, lifestyle changes and therapeutic optimization is a central core of cardiac rehabilitation. However, further studies are needed to demonstrate effectiveness of home-based Cardiac Rehabilitation (CR-HB) programs in controlling CVRF.
Objectives: To evaluate the effectiveness of a CR-HB program in controlling cardiovascular risk factors.
Methods: Prospective cohort study including patients who were previously participating in a centre-based CR program and accepted to participate in a CR-HB program due to forced closure of the centre-based CR program for COVID-19 pandemic. The CR-HB consisted of a multidisciplinary digital CR program, including patient regular assessment, exercise, educational, and psychological and relaxation sessions. A structured online educational program for patients and family members/caregivers was provided including educational videos, and powerpoints and webinars. A real time Webinar regarding "nutritional myths and facts" was organized with the duration of 90 minutes as a substitution of the regular face-to-face regular workshop provided at our centre-based CR program. Also, self-control of blood pressure and heart rate and of glycemia in diabetics were promoted, as well as smoking cessation.
To assess the impact of the CR-HB on risk factors control, all the patients were submitted to a clinical and analytical evaluation before and after the end of this at distance program.
Results: 116 cardiovascular disease patients (62.6 ± 8.9 years, 95 males) who were attending a face-to-face CR program were included in a CR-HB program. Almost 90% (n = 103) of the participants had coronary artery disease. Regarding risk factors, obesity was the most prevalent risk factor (74.7 %) followed by hypertension (59.6%), family history (41.8%), dyslipidaemia (37.9%), diabetes (18.1%), and smoking (12.9%). Regarding the blood pressure control, 80% of the patients stated that almost daily they measured blood pressure at home; baseline systolic pressure decreased from 117 ± 13 to 113 ± 12 mmHg, p = 0.007, while there was no significant change in diastolic pressure. The majority (76%) of diabetic patients said they controlled blood glucose; HbA1c decreased from 6.1 ± 1.1 to 5.9 ± 0.9 mg/dL (p = 0.047). Considering the lipid profile, LDL decreased (from 75 ± 30 to 65 ± 26 mg/dL, p = 0.012). The Nt-proBNP also decreased (818 ± 1,332 vs 414 pg/ml ± 591, p = 0.042). There were no other statistically significant differences concerning risk factors modification.
Conclusions: Our study showed that a Home-based Cardiac Rehabilitation program can improve or maintain cardiovascular risk factors control, which has important prognostic implications and is frequently a difficult task to achieve.

CO 47. MORTALITY OF YOUNG PATIENTS WITH SEVERE CORONARY DISEASE AND NO IDENTIFIABLE CARDIOVASCULAR RISK FACTORS

Pedro Custódio[1], Luís Oliveira[2], Gonçalo Cunha[2], Mariana Gonçalves[2], Afonso Oliveira[2], Gustavo Mendes[2], Sérgio Madeira[2], João Brito[2], Sílvio Leal[2], Rui C. Teles[2], Luís Raposo[2], Henrique M. Gabriel[2], Pedro Gonçalves[2], Manuel de Sousa Almeida[2], Miguel Mendes[2]

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Introduction: Clinically significant coronary artery disease has a strong correlation with traditionally identifiable cardiovascular risk factors (CRF), namely obesity (defined as IMC > 30), diabetes mellitus(DM), dyslipidemia, tobacco consumption, hypertension and chronic renal disease. The majority of these comorbidities are thought to accelerate the atherosclerotic pathways through an inflammasome mediated response, that may take decades to become symptomatic. In young patients with severe coronary artery disease without any of the aforementioned comorbidities, other genetically or environmental factors have a potential role. Despite this, the same cardiovascular risk scores are used.
Objectives: Identify the prevalence of young patients with severe coronary artery disease without any CRF. Evaluate the 5 year mortality in these patients and compare it to patients with CRF.
Methods: Retrospective single center study of consecutive patients admitted to the CATH LAB younger than 60years, between January 2007 and December 2015, with a SYNTAX SCORE greater that 22 or with angiographically significant disease (> 50% stenosis) of the left main or the proximal left anterior descendent coronary artery. Patients that were not treated surgically nor percutaneously were excluded as were those with a hybrid approach. The presence of CRF was assessed and patients were divided based on having or not at least one of those. Binary logistic regression was used to search for differences between populations and Cox multivariate regression performed to sought for statistical differences in the 5 year mortality accounting for syntax score, age and coronary artery bypass grafting.
Results: A total of 1,103 patients were included. Mean age 52.9 ± 6.1 years; 924 (83.8%) were male. As for the prevalence of CRF: DM 27.6%; HT 60.5%; Dyslpidemia 61%; Tobacco consumption 66.1%; CRD 3.5% and obesity 25.2%. 47 patients had no identifiable CRF (4.3%). The global 5 year mortality was 5.3% (5% for patients with CRF vs 10.6% for those without). The two subgroups showed no differences in terms of age, syntax score and previous CABG. There was no statistically significant difference in the 5 year mortality between the two groups (B = 0.83; p = 0.079), showing a discrete trend toward lower risk in those with CRF. As expected, there was statistically significant differences in mortality according to the syntax score (p = 0.003) and age (p = 0.05). CABG surgery showed a trend toward lower mortality (p = 0.057).

Table 1. Cox regression for 5year mortality between patients with and with CRF

	B	SE	Wald	gl	Sig.	Exp(B)
Factores de risco cardiovascular	-0.830	0.468	30.140	1	0.076	0.436
BYPASS	-0.628	0.330	30.615	1	0.057	0.534
Idade	0.050	0.025	30.849	1	0.050	1.051
Scores ScoreHemoSyntax	0.037	0.013	80.595	1	0.003	1.038

Table 2. Statistical diferences between populations

		B	E.P.	Wald	gl	Sig.	Exp(B)
Passo 1a	BYPASS	0.057	0.336	0.029	1	0.864	1.059
	Idade	0.039	0.021	3.378	1	0.066	1.040
	Scores ScoreHemoSyntax	-0.001	0.015	0.008	1	0.929	0.999
	Constante	1.084	1.109	0.956	1	0.328	2.957

a. Variável(is) inserida(s) no passo 1: BYPASS, Idade, Scores ScoreHemoSyntax.

Conclusions: Out of the younger patients with severe coronary artery disease, 4.3% showed no CRF. No statiscally significant difference in the 5 year mortality was found when comparing this population to the one with CRF. Currently used cardiovascular risk scores are probably inadequate to estimate future CV events in this population, which may deserve a closer follow-up.

CO 48. IS THERE A DIFFERENT IMPACT OF TRADITIONAL RISK FACTORS ON CORONARY CALCIUM SCORE, IN AN ASYMPTOMATIC POPULATION?

Margarida Temtem[1], Marco Gomes Serrão[2], Isabel Mendonça[2], Marina Santos[2], Flávio Mendonça[2], Adriano Sousa[2], Ana Célia Sousa[2], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], Sofia Borges[2], Graça Guerra[2], António Drumond[3], Roberto Palma dos Reis[4]

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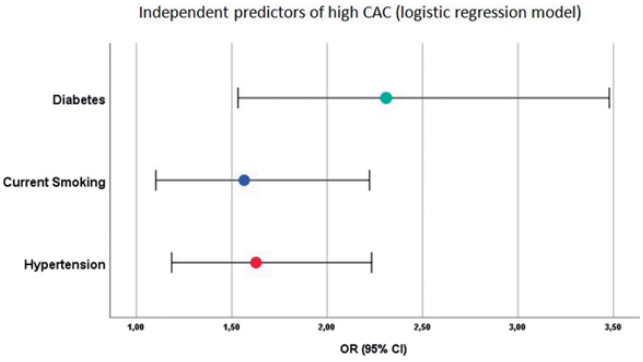
Introduction: The coronary calcium score has been increasingly used to stratify and predict cardiovascular risk, particularly in low and intermediate-risk persons. Understanding which determinants have more impact on coronary calcium score level, could lead to the development of new stricter preventive measures for reducing coronary artery calcification (CAC) and, consequently, cardiovascular risk.
Objectives: Our study aimed to investigate the impact of the traditional risk factors (TRFs) on the CAC score level and if there is a different association between this TRFs and CAC score degrees, in an asymptomatic population.
Methods: The study cohort comprised 1,122 consecutive asymptomatic individuals without known coronary artery disease (CAD) belonging to the healthy controls of GENEMACOR study, referred for computed tomography for CAC assessment. The traditional risk factors considered were (1) current cigarette smoking, (2) dyslipidemia, (3) diabetes mellitus, (4) hypertension and (5) family history of coronary artery disease. According to the Hoff´s nomogram, 3 categories were created: low CAC (0 ≤ CAC < 100 and p < 50); moderate CAC (100 ≤ CAC < 400 or P50-75) and high or severe CAC (CAC ≥ 400 or P > 75). We evaluated the association of the different TRFs with these levels of CAC score (chi-square test). Finally, we performed a logistic regression model adjusted for all significant TRFs selected in the bivariate analyses.



Results: Smoking was significantly associated with high levels of CAC score, 28.4% vs 21.7%; p = 0.038 as well as hypertension, 58.8% vs 45.6%; p = 0.001, type 2 diabetes 21.1% vs 9.6%; p < 0.0001, dyslipidemia, 73.0% vs 66.1%; p = 0.057. Family history did not show a significant association with CAC (p = 0.717). Then, we constructed a logistic regression model adjusted the significant risk factors in previous analysis. The final multivariate analysis, selected as independent predictors of high CAC: Type 2 diabetes (OR = 2.309; 95%CI 1.533-3.479; p < 0.0001), hypertension (OR = 1.627; 95%CI 1.185-2.233; p = 0.003) and smoking (OR = 1.565; 95%CI 1.102-2.222; p = 0.012).
Conclusions: In this study, well-known and modifiable traditional risk factors are associated with high calcium score levels. However, diabetes and hypertension seem to be preferentially associated with higher CAC scores, while tobacco, although it has a significant association, seems to be not so strong as diabetes and hypertension. This concept may mean that smoking has its primary role in plaque instability and not so much in the growing and calcification of plaques.

Sábado, 01 Maio de 2021 | 09H00-10H15

Sala Virtual 2 | CO 10 - Insuficiencia cardíaca crónica

CO 56. RESSINCRONIZAÇÃO CARDÍACA EM DOENTES COM INSUFICIÊNCIA CARDÍACA GRAVE: É POSSIVEL PREVER O PROGNÓSTICO AOS CINCO ANOS?

Sónia Maria Medeiros Oliveira[1], Pedro Silva Cunha[2], Miguel Mota Carmo[3], Bruno Valente[4], Inês Ricardo[1], Pedro Alves da Silva[1], Hua Yang[5], Ana Sofia Delgado[4], Luís Oliveira[6], Nelson Cunha[1], Tiago Rodrigues[1], Fausto Pinto[1], Mário Martins Oliveira[4], Ana Abreu[7]

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Introdução: A Insuficiência Cardíaca Crónica (ICC) constitui um desafio crescente para a gestão global dos recursos em saúde. O prognóstico depende da otimização farmacológica, controle de comorbilidades e fatores de risco, mudanças no estilo de vida e tratamentos invasivos, como a terapêutica de ressincronização cardíaca (TRC) e o transplante cardiaco.

	"não sobreviventes" (n=44)	"sobreviventes" (n=56)	p - valor
BNP	640,95±606,23	370,41±353,36	0.018
HMR late	1,35±0,16	1,47±0,17	0.001
FEVE	27±6,77	26±7,47	ns
Não respondedores	16 (36%)	12 (21%)	ns
VTdVE	225±73,28	191±58,5	<0.001
VTsVE	166,5±63,93	141,24±48,7	ns
hs-PCR	10,33±22,85	5,02±9,27	ns
Duração PCR	363,9±246,4	387,5±233,9	ns
VO2p	14,02±5,16	14,83±5,4	ns
SDNN	132,2±76,2	127,5±68,5	ns

Tabela 1 – Comparação dos grupos "não sobreviventes" vs "sobreviventes" (teste t student)

CO 56 Figura

Objectivo: Avaliar em doentes (D) com ICC grave e referenciados a TRC, a associação de variáveis basais, com a mortalidade em cinco anos de seguimento.
Métodos: Análise post-hoc, de uma coorte prospectiva, D com IC submetidos a TRC (2013-2015). Pré-implantação de TRC, foram avaliados dados demográficos, etiologia e classe NYHA, peptido natriurético plamático (BNP), proteína C reativa de alta sensibilidade (hs-PCR), razão coração/mediatino tardia (late HMR) por cintigrafia cardíaca com 123I-MIBG, fração de ejeção (FE) do ventrículo esquerdo (VE), volumes do VE tele-diastólico (VTd) e tele-sistólico (VTs) avaliados por ecocardiografia, duração da prova de esforço e consumo pico de oxigénio (VO2p) avaliada por prova cardiorrespiratória (PCR), análise do desvio-padrão de todos os intervalos RR normais (SDNN) no Holter de 24 horas. A mortalidade foi avaliada em cinco anos e a população foi dividida em dois grupos: «sobreviventes» e «não sobreviventes». Os dados foram analisados por estatística descritiva. O teste de Spearman foi utilizado para medir a correlação entre as variáveis basais e a morte e entre a resposta a TRC e a morte.
Resultados: 102 doente com ICC foram incluídos (idade 68,8 ± 10 anos), 68,6% homens, 70% dislipidemia, 40% diabetes mellitus, 29% cardiopatia isquémica, 74% NYHA III/IV, FEVE basal de 26 ± 7%. Destes, 27% não responderam à TRC. No seguimento de cinco anos, 1,96% foram perdidos para follow-up, 54% sobreviveram e 43% morreram (8% no primeiro ano, 14% no 2.º-3.º ano e 22% no 4.º-5º). As variáveis basais nos dois grupos («nãosobreviventes» e «sobreviventes») estão presentes na tabela 1. A análise estatística correlacionando as variáveis basais com a morte, através do teste de Spearman, mostrou uma correlação fraca, sendo as variáveis com correlação mais forte, HMR late com correlação negativa de 0,34 e VTdVE com correlação positiva 0,26. No grupo dos respondedores à TRC morreram menos doentes (34%) que no grupo dos não respondedores (57%), com uma tendência mas sem atingir significado estatístico (p = 0,07).
Conclusões: A mortalidade aos cinco anos de D com ICC grave e TRC foi elevada (43%). As variáveis pré-TRC HMR late e VTdVE tiveram a correlação mais forte com a mortalidade, podendo alertar para um pior prognóstico em D com ICC grave submetidos a TRC.

CO 51. PILL BURDEN AND OUT-OF-POCKET MEDICATION COSTS OF A CONTEMPORARY HEART FAILURE WITH REDUCED EJECTION FRACTION COHORT

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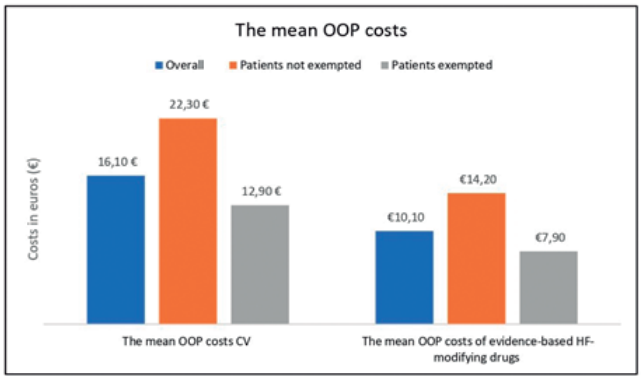
Introduction: Modern pharmacological treatment of heart failure with reduced ejection fraction (HFrEF) dramatically improves its prognosis. However, the increasingly complexity and associated costs might threat their effective uptake in clinical practice. We aimed to study the pill burden and out-of-pocket costs of cardiovascular drug therapy of a contemporary cohort of HFrEF patients.
Methods: We performed a retrospective, cross-sectional, single-center study on a convenience sample of 100 consecutive HFrEF patients assessed at our HF outpatient clinic (January-June 2020). The pill burden was assessed by the number of prescribed different cardiovascular drugs and pills per day. The out-of-pocket (OOP) costs were defined using the total patients co-payment of cardiovascular medications per month of treatment, taken in account the exemptions provided by the Portuguese National Health System (NHS). The included drug classes were antiplatelets, anticoagulants, statins, HF drugs (Beta-blockers [BB], angiotensin-converting enzyme inhibitors [ACEi]/angiotensin receptor blockers [ARBs]/angiotensin receptor-neprilysin inhibition [ARNI], mineralocorticoid antagonists [MRA], sodium glucose cotransport inhibitors [iSGLT2], digoxin, loop diuretic) and antiarrhythmics.
Results: The mean age was 62 ± 12 years and only 24% were female. The etiology of HF was ischemic in 42% of the patients, 86% were in NYHA II class and 5% in NYHA III-IV. The mean LVEF was 34 ± 5% and the median NT-proBNP was 482 pg/mL [172-1,120]. 92% of patients were on BB, 67% on ACEI/ARBs, 25% on ARNI, 81% on MRA and 30% on iSGLT2. The use of implantable cardioverter-defibrillators was 38% and 20% of patients were resynchronized. The number of cardiovascular (CV) drugs per day was 5.4 ± 1.6 per patient and the number of CV pills per day was 6.6 ± 2. Most patients (65%) had low income and had the maximal exemption on medication costs provided by NHS. Overall, the mean OOP costs was €16.1 per month of treatment and the mean OOP costs for patients exempted and not exempted was €12.9 and €22.3, respectively. The mean OOP costs of evidence-based HF-modifying drugs (BB, ACEI/ARBs, ARNI, MRA, iSGLT2) was €10.1 and the mean OOP costs of evidence-based HF-modifying drugs for patients exempted and not exempted were €7.9 and €14.2, respectively. However, for patients on ARNI the mean OOP costs was almost 3 times higher (€33.6).

Figure1: The mean OOP costs. OOP, out-of-pocket, CV, cardiovascular, HF, heart failure.



Conclusions: In this optimally treated contemporary cohort of HFrEF, the pill burden due to cardiovascular therapy only is high (7 pills/day). With the exception of patients on ARNI, the overall OOP costs of HF-modifying prognostic drugs are low. Further studies are needed to assess the impact of these variables in the adherence of HF treatment.

CO 53. C-REACTIVE PROTEIN REDUCTION WITH SACUBITRIL-VALSARTAN TREATMENT IN HEART FAILURE PATIENTS

Ana Rita Teixeira, António Valentim Gonçalves, Tiago Pereira da Silva, Ana Galrinho, Pedro Rio, Luísa Moura Branco, Rui M. Soares, Rita Ilhão Moreira, Bárbara Teixeira, Sofia Jacinto, Rui Cruz Ferreira

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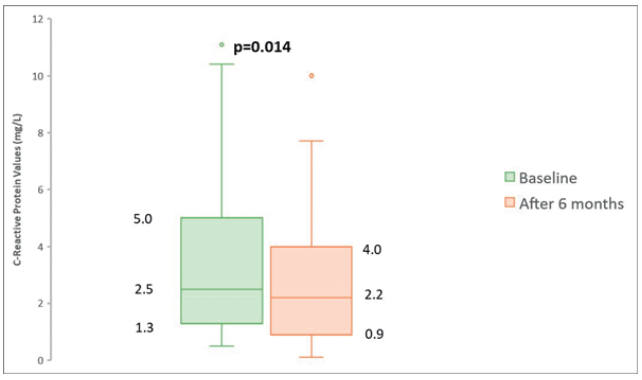
Introduction: C-Reactive Protein (CRP) has emerged as an accessible measured product of inflammation. Whether systemic inflammation, a common feature of Heart Failure (HF), can be reduced by HF treatments in not well established. Sacubitril/Valsartan had prognosis benefit demonstrated in the PARADIGM-HF trial and was able to reduce proinflammatory cytokines in preclinical animal studies. However, no human studies evaluated if the benefits of this therapy are mediated by anti-inflammatory effects too. The aim of this study was to prospectively compare CRP values before and six months after Sacubitril-Valsartan therapy.
Methods: Prospective evaluation of chronic HF patients with left ventricular ejection fraction ≤ 40% despite optimized standard of care therapy, in which Sacubitril/Valsartan therapy was started and no additional HF treatment was expected to change. Clinical, laboratorial (including CRP values), electrocardiographic, transthoracic echocardiography and cardiopulmonary exercise test (CPET) data were gathered in the week before starting Sacubitril/Valsartan therapy and six months thereafter.
Results: There were 42 patients with a mean age of 59 ± 11 years, of which 35 completed the six months of follow-up, since 2 patients died and 5 discontinued treatment for adverse events. Patients with baseline CRP values above the median (> 2.5 mg/L) had a significantly higher percentage of New York Heart Association class ≥ III (65% vs. 33%, p = 0.028) and a reduced exercise time in CPET (361 ± 297 vs. 575 ± 265 seconds, p = 0.034). After 6 months of Sacubitril-Valsartan therapy, 24 (69%) patients had an improvement in CRP values with a significantly reduction as compared to baseline (median 2.5 mg/L (Interquartile range (IQR) 1.3-5.0) vs. 2.2 mg/L (IQR 0.9-4.0), p = 0.014 in the Wilcoxon test). In the group of 17 (49%) patients with at least 25% improvement in CRP values with Sacubitril/Valsartan

therapy, the benefit of several clinical, CPET and echocardiographic parameters were not significantly different from the benefit of patients with no improvement or an improvement inferior to 25% in CRP values.



Conclusions: Sacubitril/Valsartan therapy was able to reduce CRP values in a chronic HF population. Whether this reduction was only a consequence of clinical improvement with Sacubitril/Valsartan or an anti-inflammatory effect is also present should be further evaluated.

CO 52. PREDICTING OBSTRUCTIVE CORONARY ARTERY DISEASE IN HEART FAILURE-A PRACTICAL CLINICAL SCORE

Francisco Albuquerque, Afonso Félix Oliveira, Pedro de Araújo Gonçalves, Rui Campante Teles, Manuel de Sousa Almeida, Mariana Gonçalves, Pedro M. Lopes, Gonçalo J.L. Cunha, João Presume, Daniel Matos, Sérgio Madeira, João Brito, Luís Raposo, Henrique Mesquita Gabriel, Miguel Mendes

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Coronary artery disease (CAD) remains the most common etiology of heart failure with reduced ejection fraction (HFrEF). However, controversy exists whether invasive coronary angiography (ICA) should be initially used to exclude CAD in patients presenting with de novo heart failure. The aim of our study was to develop a clinical score to quantify the risk of obstructive CAD in these patients.
Methods: Cross-sectional observational study of 22,383 consecutive patients undergoing elective ICA in one academic center, between January 2005 and December 2019. Predefined exclusion criteria were applied to derive a total cohort of 452 patients with HFrEF without known CAD. Independent predictors for obstructive CAD were identified. Using multivariate logistic regression of designated variables, a risk score was developed. The accuracy and discriminative power of the predictive model were assessed.
Results: 109 patients (24.1%) presented obstructive CAD. Six independent predictors were identified and included in the score: male sex (2 points), diabetes mellitus (1 point), dyslipidemia (1 point), smoking (1 point), peripheral artery disease (1 point) and regional wall motion abnormalities (3 points). Patients with a score ≤ 3 had less than 15% of predicted probability of obstructive CAD. Our score showed good discriminative power (C-statistic 0.872; 95%CI 0.834-0.909: p-value < 0.001) and calibration (p-value from the goodness-of-fit test of 0.333).
Conclusions: A simple clinical score showed the ability to predict the risk of obstructive CAD in patients presenting HFrEF and may guide the clinician selecting the most appropriate diagnostic modality for the evaluation of obstructive CAD in this patient population.

CO 54. DO ALPHA-ADRENERGIC BLOCKERS REALLY INCREASE THE RISK OF POOR CARDIOVASCULAR OUTCOMES? AN ACROSS-THE-BOARD META-ANALYSIS

José Pedro Sousa[1], Diogo Mendonça[2], Rogério Teixeira[3], Lino Gonçalves[3]

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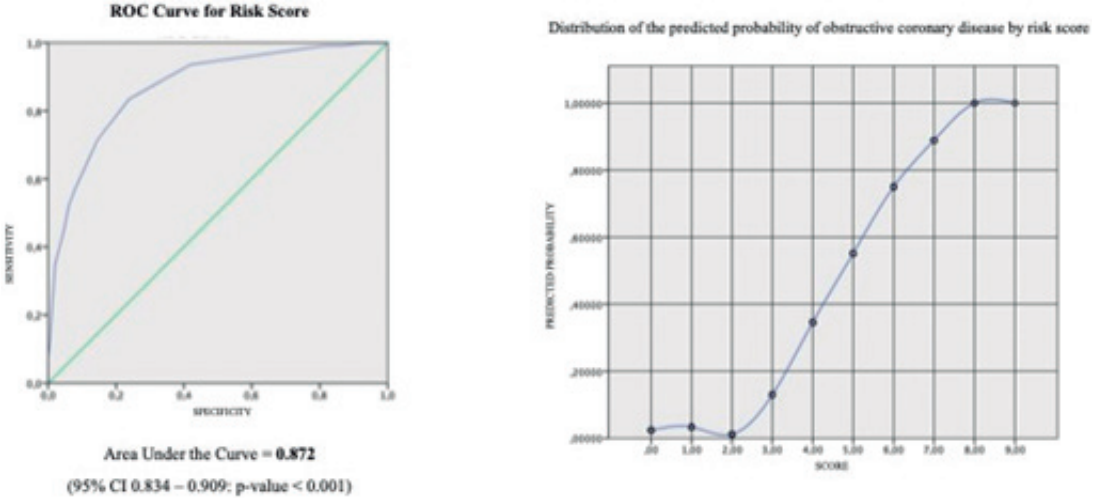
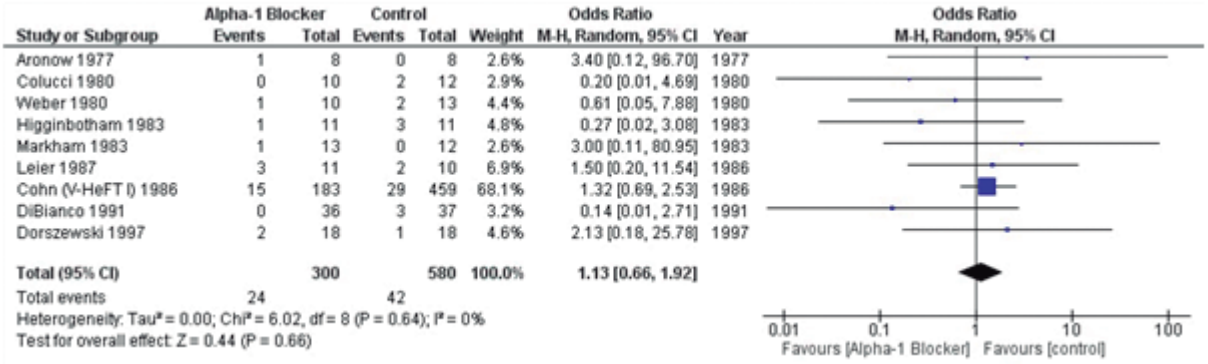
Introduction: Due to presumed neurohormonal activation and fluid retention, alpha-adrenergic blockers (ABs) are avoided in the setting of heart disease, namely heart failure (HF) with reduced ejection fraction (HFrEF). However, this contraindication is mainly supported by ancient studies, having recently been challenged by newer ones.
Objectives: To perform a comprehensive meta-analysis aimed at ascertaining the extent to which ABs influence cardiovascular (CV) outcomes.
Methods: We systematically searched MEDLINE, Cochrane Central Register of Controlled Trials and Web of Science for both prospective and retrospective studies, published until November 29th 2020, addressing the impact of ABs on acute heart failure (AHF), acute coronary syndrome (ACS), CV and all-cause mortality rate, as well as on left ventricular ejection fraction (LVEF) and exercise tolerance, by means of exercise duration. Both randomized controlled trials (RCTs) and studies specifically addressing HF patients were further investigated separately. Odds ratios (ORs) and mean differences (MDs) were pooled using traditional meta-analytic techniques, under a random-effects model.
Results: 15 RCTs, 4 non-randomized prospective and 2 retrospective studies, encompassing 32,851, 19,374 and 71,600 patients, respectively, were deemed eligible. 14 studies, including 72,558 patients, comprised only chronic HF patients. 62,299 were allocated to AB. There were 25,998 AHF events, 1,325 ACSs, 954 CV and 33,566 all-cause deaths. ABs were,



CO 52 Figure



CO 54 Figure

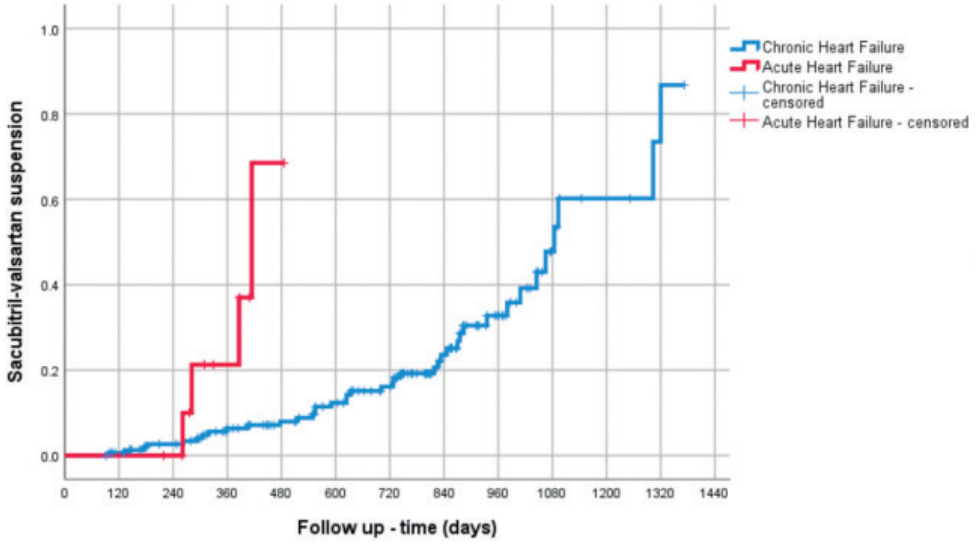
indeed, found to increase AHF risk (OR 1.78, 95%CI 1.46-2.16, i² 2%), although displaying no significant effect on ACS, CV and all-cause mortality rates (OR 1.02, 95%CI 0.91-1.15, i² 0%; OR 0.95, 95%CI 0.47-1.91, i² 17%; OR 1.1, 95%CI 0.84-1.43, i² 17%, respectively). When only HF patients were evaluated, ABs revealed themselves neutral towards AHF, ACS, CV and all-cause mortality events (OR 1.13, 95%CI 0.66-1.192, i² 0%; OR 0.49, 95%CI 0.1-2.47, i² 0%; OR 0.7, 95%CI 0.21-2.31, i² 21%; OR 1.09, 95%CI 0.53-2.23, i² 17%, respectively). As for HFrEF patients, ABs exerted a similarly inconsequential effect on AHF odds (OR 1.01, 95%CI 0.5-2.05, i² 6%). LVEF was not significantly influenced by ABs and exercise tolerance was even higher in those under this drug class (MD 139.16, 95%CI 65.52-212.8, i² 26%).
Conclusions: ABs do seem to increase AHF odds, even though at the cost of those at lower risk, thus contradicting current guidelines. Other major CV outcomes appear unchanged.

CO 55. PREDICTORS OF MAXIMAL DOSE TITRATION OF SACUBITRIL-VALSARTAN

Ana Beatriz Garcia[1], Ana Margarida Martins[2], Catarina Oliveira[2], Joana Brito[2], Beatriz Silva[2], Pedro Alves da Silva[2], Sara Couto Pereira[2], Pedro Silvério António[2], Nelson Cunha[2], Tiago Rodrigues[2], Joana Rigueira[2], João Agostinho[2], Nuno Lousada[2], Fausto J. Pinto[2], Dulce Brito[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Sacubitril-valsartan S/V demonstrated a reduction in all-cause mortality and heart failure (HF) admissions in patients (pts) with reduced ejection fraction (HFrEF). However, achievement the same doses used on clinical trials can be difficult in real world practice. Little information is available on predicting which pts will achieve higher S/V doses.
Objectives: To identify predictors of sacubitril/valsartan titration to the maximal dose.
Methods: Retrospective single-center study of consecutive pts with HFrEF followed at an Ambulatory Heart Failure Clinic. Baseline and follow-up clinical characteristics and biomarker profiles were collected. Univariate and multivariate analyses were used to find predictors of achieving the S/V maximal dose (97/103 mmHg bid).
Results: One hundred seventy-two pts were included, 80% (n = 137) males, mean age 67 ± 12 years, mostly with ischemic heart disease (55%) or dilated cardiomyopathy (36%) and in NYHA functional class II (71%). The mean left ventricular ejection fraction was 28 ± 7%. The mean follow-up time was 632 ± 313 days. Sixty-three patients (37%) achieved maximal dose of S/V, but only 26% (n = 44) maintained that dose. Younger age (OR 0.97; p = 0.030), acute "de novo" HF (OR 7.14; p < 0.001) and higher NYHA functional class (OR 1.92; p = 0.036) was associated with achieving the maximal dose. On multivariate analyses, after adjusting for age, functional class, eGFR, systolic blood pressure, previous dose of angiotensin receptor blockers or angiotensin converting enzyme inhibitors, and acute "de novo" HF was found to be the only independent predictor of attaining maximal dose of S/V (OR = 7.1, 95%IC 2.12- 23.04 p < 0.001). Dose reduction was needed in 36 patients (21%). Symptomatic hypotension was the most common reason to reduce the dose (15%; n = 18) and to completely withdraw S/V (10%; n = 12). The other reasons that led to dose reduction were acutely decompensated



CO 55 Figure

HF, worsening renal function, cough and economic insufficiency (3.3%, 2.4%, 2.4% and 1.6%, respectively). Hyperkalemia led to dose reduction in 1 pt and no S/V withdrawal was due to this adverse effect.
Conclusions: Sacubitril-valsartan was well tolerated and uptitration to the maximal dose of sacubitril/valsartan was possible in up to 37% of a real-world HFrEF cohort. Initiation sacubitril/valsartan during acute "de novo" Heart Failure phase independently predicts maximal dose achieving. Consequently, this study suggests that patients may attain higher benefit on initiating sacubitril/valsartan early after symptoms presentation.

Sábado, 01 Maio de 2021 | 16H45-18H00

Sala Virtual 2 | CO 11- Síncope

CO 59. FRONT-LOADED HEAD-UP TILT TABLE TESTING FOR THE DIAGNOSIS OF REFLEX SYNCOPE

Catarina de Oliveira, Helena da Fonseca, Sérgio Laranjo, Pedro Silva Cunha, Madalena Coutinho Cruz, Bruno Valente, Guilherme Portugal, Rui Cruz Ferreira, Mário Martins Oliveira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

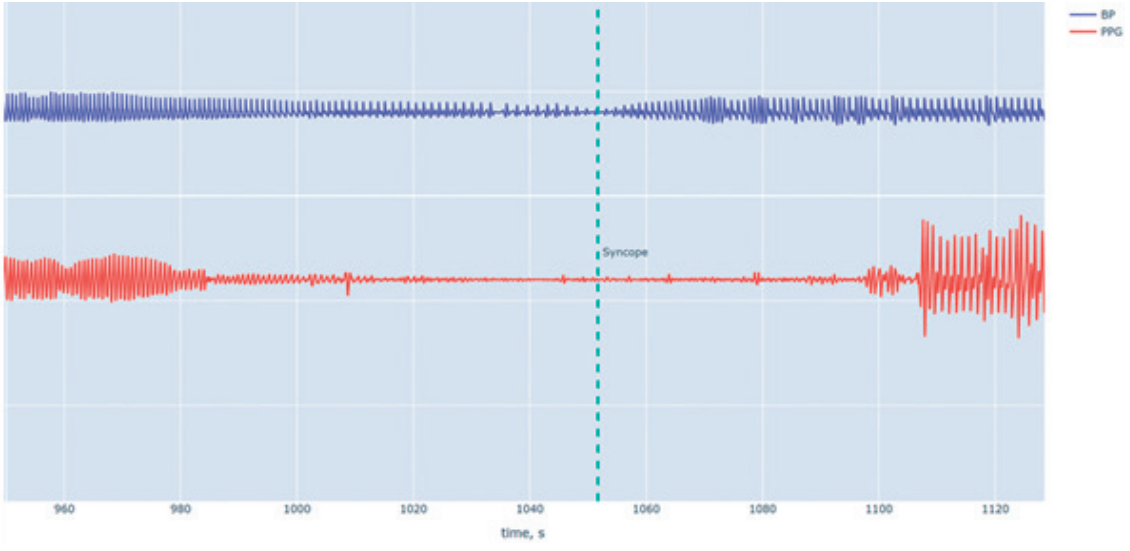
Introduction: Head-up tilt testing (HUT) is commonly used for the diagnosis of reflex syncope, with various protocols applied in the last two decades. Currently, it is a labour intensive and time-consuming method, particularly in the present COVID-19 pandemic. The front-loaded (FL) protocol has been suggested as a rapid alternative to conventional "passive" protocol option, with the potential to provide a higher diagnostic. Our aim was to compare the clinical, hemodynamic and autonomic results of the FL HUT and the modified Italian protocol (IP) in patients (P) with reflex syncope.
Methods: 165 consecutive P with unexplained recurrent syncope were submitted to HUT from September 2019 to December 2020. The modified IP was applied in 88 P (53%), and 77 P (47%) were assigned to the FL protocol. Briefly, in the IP, there was a supine stabilization phase of 20 min, followed by a 20 min passive phase at 70 degrees tilt angle and a provocation phase of further 20 min (after 500 μg sublingual nitroglycerin [NTG]). In the FL the supine phase was of 10 min, followed by administration of 500 μg NTG and 20 min at a tilt angle of 70 degrees. Positive responses were classified according to the modified Vasovagal Syncope International Study (VASIS) classification. All P were continuously monitored for blood pressure, ECG, stroke volume (SV), cardiac output (CO), total peripheral resistance (TPR) and autonomic variables using a TaskForce monitor (CNSystems, Graz, Austria).
Results: In both protocols, P were divided in 2 groups according to NTG response: "fainters" (HUT[+]) and "non fainters"(HUT[-]). In the IP 73% (n = 64) were fainters (23% type 1, 9% type 2A, 16% type 2B, 52% type 3). In comparison, in FL 45% (n = 35) fainted (14% type 1, 9% type 2A, 20% type 2B, 57% type 3). After NTG the hemodynamic and autonomic responses were similar for both protocols: SV, CO and TPR decreased progressively, together with HR increase, but with statistical significance only for HUT[+]. Moreover, BP was stable during a short period, after which a progressive and significant decrease was observed till syncope. In HUT[-], BP, despite slightly lower, was not significantly different from the values of the drug-free period. HUT[+] had a significant rise of sympathetic activity, followed by a continuous steep decrease (to levels below drug-free period) towards syncope; whereas HUT[-] showed a mild, yet significant, increase in sympathetic activity. Baroreflex sensitivity decreased after NTG in all P, but significance was found only for HUT[+].
Conclusions: The FL protocol proved to be an effective, faster, alternative for HUT. The mechanisms underlying the protocol are similar between different protocols. This fact supports the benefit of its use, namely during pandemic, where contacts with patients should be reduced to the essential minimum.

CO 62. PREDICTING REFLEX SYNCOPE BASED ON PLETHYSMOGRAPHY: A NEW WEARABLE DEVICE DEVELOPMENT AND PRELIMINARY RESULTS

Guilherme Lourenço[1], Sérgio Laranjo[1], Lourenço Rodrigues[2], André Lourenço[3], Helena Fonseca[1], Catarina Oliveira[1], Pedro Cunha[1], Mário Oliveira[1]

[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [2]ISEL e CardioID. [3]CardioID.

Introduction: Recurrent reflex syncope (RSync) is a common clinical condition with a major impact on patients' life. The underlying mechanism is a transient global cerebral hypoperfusion accompanied by rapid blood pressure (BP) drop. Isometric counterpressure maneuvers (legs/arms) induce BP increase during the phase of impending syncope, avoiding or delaying losing consciousness. Therefore, detecting the onset of syncope mechanism as early as possible it is of major importance, particularly in patients (P) without prodromes.



CO 62 Figure

Objectives: To develop an innovative wearable, efficient and reliable device with the ability to anticipate the RSync.
Methods: P with recurrent syncope referred for head-up tilt testing (HUT) were monitored using a continuous non-invasive arterial BP system (TaskForce Monitor, CNSystems, Graz, Austria), complemented with the synchronized acquisition of plethysmography (PPG) signals using an innovative wearable device. The device used in this experiment is based on the Maxim platform - a wrist band PPG sensor with 3 integrated wavelengths. It uses two sensors with green LEDs, one red and a fourth infrared one to guarantee the required robustness, as well as a 3-axis accelerometer sensor. It allows monitoring of instantaneous heart rate and oxygen saturation, but also the extraction of the raw sensor data, enabling the analysis conducted in this study. The continuous BP signal was synchronized with the PPG by extracting the intervals between systolic peaks and finding the delay on PPG that minimized the quadratic difference between the tachogram time series. Synchronization was further refined by the human verification of the initial estimate. From the aligned signals, a segment of 120 sec was extracted from the basal period, as well as the 120 sec prior to the syncopal event.
Results: Ten P with HUT-induced RSync (1 cardioinhibitory, 5 mixed-type and 4 vasodepressor) were enrolled in this proof of concept study. By computing the areas in each segment, normalized by the amplitude of the basal pulses in each signal, a consistent and significant reduction of the PPG amplitude and wave patterns was found between pre-syncopal and basal periods, starting, at average, 60 sec before syncope, preceding the systolic BP, stroke volume and cardiac output changes.
Conclusions: Predicting RSync is feasible by monitoring PPG amplitude and morphology changes along the time. This new approach may have a relevant impact in the future management of RSync.

CO 58. QUALITY OF LIFE IN REFLEX SYNCOPE PATIENTS: BENEFITS OF A SYSTEMATIC EDUCATIONAL PREVENTION PROGRAM

Helena da Fonseca, Catarina de Oliveira, Sérgio Laranjo, Pedro Silva Cunha, Madalena Coutinho Cruz, Bruno Valente, Guilherme Portugal, Rui Cruz Ferreira, Mário Martins Oliveira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Syncope is a common clinical condition with a major impact on patients' quality of life (QOL). QOL measurement scales have a useful role in the management of this common situation and play an important role in its treatment. Education, lifestyle measures, adequate hydration, salt intake and counter-pressure manoeuvres are well established for the treatment of reflex syncope.
Objectives: Assess a 3-month evolution of a prevention educational measures program in patients (P) with recurrent reflex syncope through the application of a specific questionnaire of Impact of Syncope in Quality of Life (ISQL) in a syncope unit (US).
Methods: ISQL was applied to all P referred to head-up tilt testing (HUT) from May to October 2020. After HUT P received an educational program to avoid syncope recurrence. Three months after HUT, a new ISQL application was done and educational measures sessions repeated.
Results: We studied 49 P (51% women, median age of 56.7 years). Syncope recurrence was noticed in 16% (n = 8), with a mean recurrence of a single episode. When asked for adherence to preventive measures 96% answered "yes". However, in the questionnaire, only 20% adopted all non-pharmacological recommendations. The median ISQL before HUT was 44.2 ± 11.9, and 3-months after 50.53 ± 8.9 ($p < 0.05$). ISQL item about "fright of fainting" has shown a decrease in 51% of the P and the "emotional confusion created by fainting" had a drop of 12%.
Conclusions: A systematic educational program in recurrent reflex syncope appears to be effective reducing syncopal recurrence rate and improving QOL.

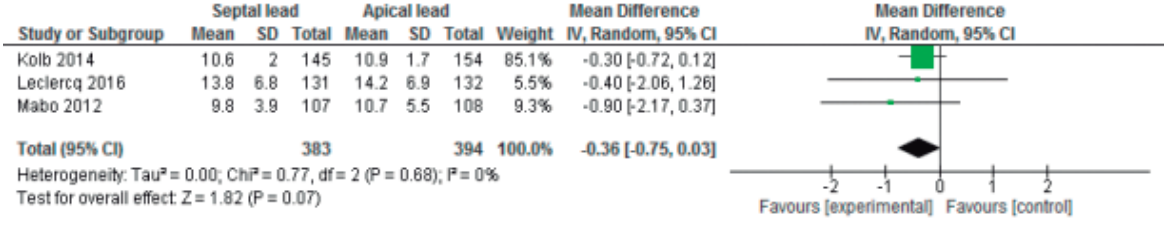
CO 57. SEPTAL VS. APICAL CARDIOVERTER-DEFIBRILLATOR RIGHT VENTRICLE ELECTRODE PLACEMENT-A SYSTEMATIC REVIEW ON LONG-TERM FOLLOW-UP

Hélder Santos[1], Mariana Santos[2], Inês Almeida[2], Paula Sofia Paula[2], Margarida Figueiredo[2], Guilherme Portugal[3], Bruno Valente[3], Pedro Cunha[3], Micaela Neto[2], Lurdes Almeida[2], Mário Oliveira[3]

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [2]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário. [3]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

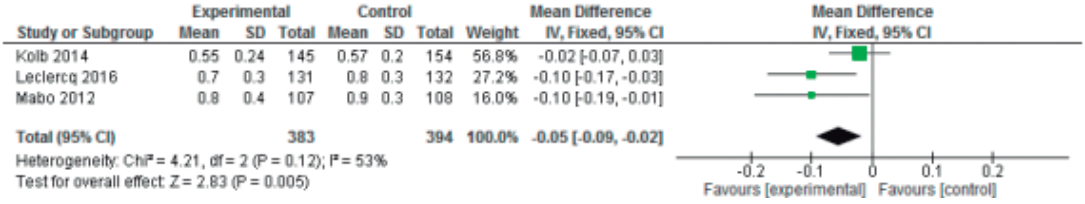
Introduction: The optimal right ventricular (RV) defibrillator lead placement is still a debatable matter. We attempt to performed a systemic review to evaluate whether septal and apical placement had significant differences in the implantation parameters and during follow-up.
Objectives: Review the evidence regarding the efficacy and safety of apical and septal RV defibrillator lead placement.
Methods: A systemic search on MEDLINE and PUBMED databases with the terms "septal pacing", "apical pacing" "septal defibrillation" and "apical defibrillation". A total of 309 results was identified and subsequently selected after a serious analysis, just comparisons with long-term follow up was included. Comparisons between apical and septal placement were performed regarding R-wave amplitude, pacing threshold at a pulse width of 0.5 ms, pacing and shock lead impedance, left ventricular ejection fraction (LVEF), left ventricular end-diastolic diameter (LVEDD) and lead complications.
Results: A total of 6 studies with > 1 year follow-up comprising 2180 patients was included in the analysis. The studies were performed with different techniques, analyses and goals, and presented heterogeneous results. Mean age was 64.5 years, 76.9% were male, with a median LVEF of 27.8%, NYHA class of 2.65, ischemic etiologic in 51.1% and a mean follow-up period of 26.5 months. Apical lead placement was performed in 1399 patients while the septal lead placement was established in 772 patients. No differences regarding the lead performance on apical and septal placement were detected regarding the R-wave (MD -0.36, CI -0.75 - +0.03, $p = 0.68$, $I^2 = 0\%$) (reported in 3 studies, graph 1) and lead impedance (MD -23.83, CI -51.36 - +3.69, $p = 0.003$, $I^2 = 82\%$) (reported in 3 studies, graph 2). Pacing threshold showed values in favour of a septal defibrillator lead implantation (MD -0.05, CI -0.09 - -0.02, $p = 0.12$, $I^2 = 53\%$) (reported in 3 studies, graph 3). Regarding echocardiography parameters during the follow-up period, LVEF (MD -0.83, CI -3.05 - +1.38, $p = 0.10$, $I^2 = 57\%$) (reported in 3 studies, graph 4) and LVEDD (MD -0.51, CI -2.13 - +1.10, $p = 0.20$, $I^2 = 38\%$) (reported in 3 studies, graph 5) were not significant influenced by the defibrillator lead placement. Lead complications rate causing lead replacement was not significant different between the lead placement (MD 1.25, CI 0.53-2.94, $p = 0.71$, $I^2 = 0\%$) (reported in 3 studies, graph 6).

Graph 1: R wave parameters between the septal vs apical defibrillator lead placement.



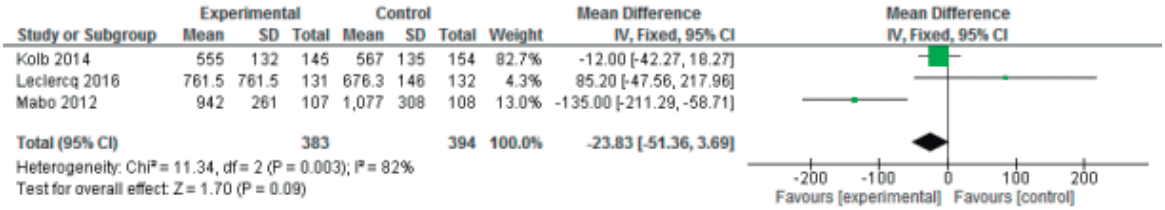
CO 57 Figure 1

Graph 2: Pacing threshold at 0.5 ms between the septal vs apical defibrillator lead placement.



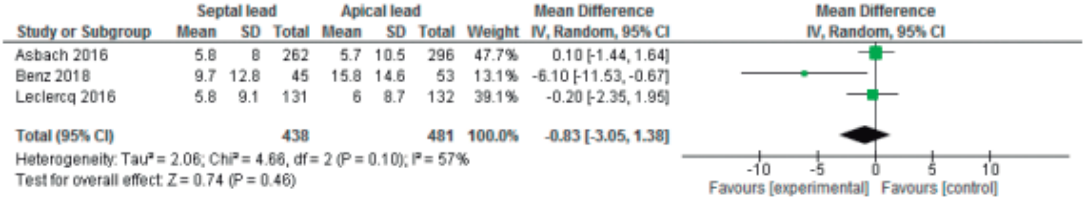
CO 57 Figure 2

Graph 3: Lead impedance between the septal vs apical defibrillator lead placement.



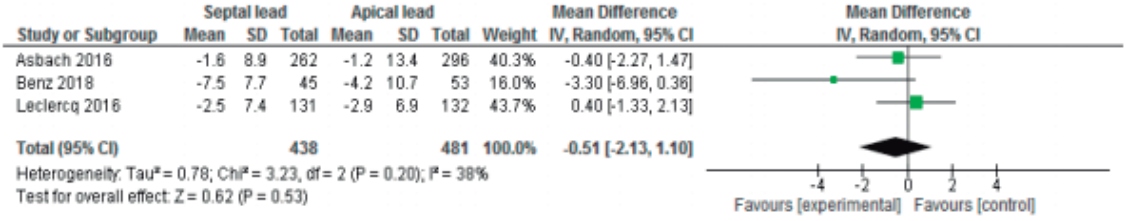
CO 57 Figure 3

Graph 4: LVEF variation with a follow up between the septal vs apical defibrillator lead placement.



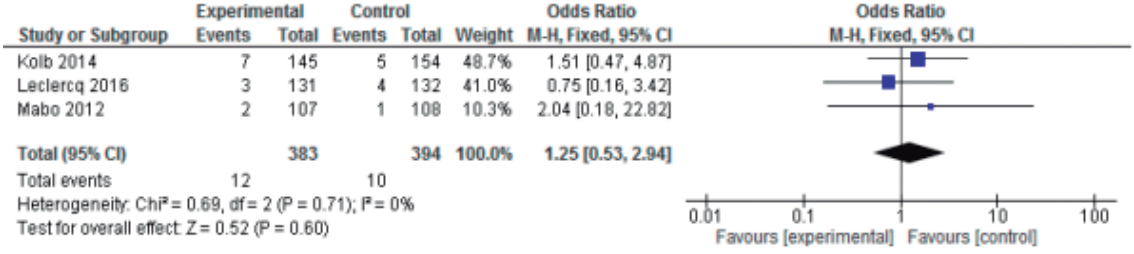
CO 57 Figure 4

Graph 5: LVEDD variation with a follow up between the septal vs apical defibrillator lead placement.



CO 57 Figure 5

Graph 6: Lead complications between the septal vs apical defibrillator lead placement.



CO 57 Figure 6

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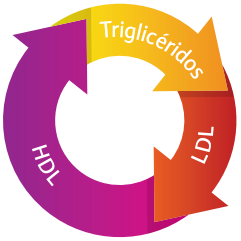

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Excipiente com efeito conhecido: Cada cápsula contém 19 mg de lactose **FORMA FARMACÊUTICA** Cápsula com corpo verde-claro e tampa cor de azeitona, contendo uma massa cerosa bege esbranquiçada e um comprimido. **INDICAÇÕES TERAPÊUTICAS** Pravafenix é indicado, enquanto complemento a tratamento dietético e outros tratamentos não farmacológicos (ex.: exercício, redução do peso), para o tratamento de hiperlipidemia mista em doentes adultos com alto risco cardiovascular para reduzir os triglicéridos e aumentar o colesterol HDL quando os níveis de colesterol LDL estão adequadamente controlados devido ao tratamento com 40 mg de pravastatina em monoterapia. **POSOLOGIA E MODO DE ADMINISTRAÇÃO** Antes de iniciar o tratamento com Pravafenix, as causas secundárias da dislipidemia combinada devem ser excluídas e os doentes devem ser colocados sob uma dieta padrão para a redução do colesterol e dos triglicéridos, que deve ser continuada durante o tratamento. Posologia A dose recomendada é de uma cápsula por dia. As restrições dietéticas implementadas antes da terapêutica devem ser continuadas. A resposta à terapêutica deve ser monitorizada por determinação dos valores dos lípidos séricos. É habitual observar-se uma redução rápida dos níveis de lípidos séricos após o tratamento com Pravafenix. Porém, este deve ser suspenso no caso de não se obter uma resposta adequada no prazo de três meses. Populações especiais: Doentes idosos (≥ 65 anos de idade)- O início do tratamento deve ser decidido após a avaliação da função renal. Os dados de segurança disponíveis relativos à utilização de Pravafenix em doentes com >75 anos de idade são limitados e devem ser tomadas precauções. Compromisso renal - Contraindicado em doentes com compromisso renal moderado a grave (definido como depuração da creatinina < 60 ml/min.) Não deverão ser necessárias quaisquer alterações à posologia em doentes com compromisso renal ligeiro. Afeção hepática - Não recomendado em doentes com afeção hepática moderada e contraindicado em doentes com afeção hepática grave. Não são necessários ajustes de posologia em doentes com afeção hepática ligeira. População pediátrica (< 18 anos de idade) - Não existe utilização relevante de Pravafenix na população pediátrica (< 18 anos) para indicação de dislipidemia mista. Modo de administração: Via oral. Dose recomendada: uma cápsula por dia tomada ao jantar. Pravafenix deve ser tomado com alimentos. **CONTRAINDICAÇÕES** - Hipersensibilidade às substâncias ativas ou a qualquer um dos excipientes. - Afeção hepática grave, incluindo cirrose biliar ou doença hepática ativa, incluindo aumentos persistentes não explicáveis dos testes da função hepática (incluindo aumento das transaminases séricas) superiores a três vezes o limite superior do normal (LSN). - Crianças e adolescentes (idade inferior a 18 anos). - Compromisso renal moderado a grave (definido como uma depuração estimada da creatinina < 60 ml/min). - Fotoalergia ou reação fototóxica conhecida durante o tratamento com fibratos ou cetoprofeno. Doença da vesícula biliar. - Pancreatite crónica ou aguda, excetuando pancreatite aguda devido a hipertrigliceridemia grave. Gravidez e amamentação. - História pessoal de miopatia e/ou rabdomiólise com estatinas e/ou fibratos ou aumento confirmado da creatina fosfoquinase (CK) superior a cinco vezes o limite superior do normal (LSN) no tratamento prévio com estatina. **ADVERTÊNCIAS E PRECAUÇÕES ESPECIAIS DE UTILIZAÇÃO** As propriedades farmacocinéticas de Pravafenix não são completamente idênticas às da administração concomitante das monoterapias existentes, quando tomado com uma refeição rica em gordura ou em jejum. Os doentes não devem mudar de uma administração conjunta livre da preparação de fenofibrato e pravastatina para Pravafenix. A pravastatina não deve ser coadministrada por via sistémica com o ácido fusídico. Foram notificados casos de rabdomiólise (incluindo alguns casos fatais) em doentes que receberam esta associação. Em doentes cuja utilização do ácido fusídico por via sistémica é considerada essencial, o tratamento com estatinas deverá ser interrompido durante o tempo de tratamento com o ácido fusídico. A terapia com estatinas pode ser reintroduzida sete dias após a última dose de ácido fusídico. Em circunstâncias excecionais, em que é necessária a administração por via sistémica prolongada de ácido fusídico, por exemplo, para o tratamento de infeções graves, a necessidade de coadministração de pravastatina e ácido fusídico só deve ser considerada caso a caso e sob supervisão médica. A monitorização de rotina da CK é sistematicamente recomendada todos os 3 meses, durante os primeiros 12 meses da terapêutica de associação e, depois desse período inicial, deve ser deixada à consideração do médico. Afeções hepatobiliares - Recomenda-se a monitorização dos níveis das transaminases todos os 3 meses, durante os 12 primeiros meses de tratamento e, depois desse período inicial, a mesma deve ser deixada à consideração do médico. Colelitíase - O fenofibrato pode aumentar a excreção do colesterol pela bílis, causando potencialmente colelitíase. No caso de suspeita de colelitíase, estão indicados exames à vesícula biliar. Pravafenix deve ser suspenso se forem encontrados cálculos biliares. Acontecimentos venotromboembólicos: Deverá ter-se precaução nos doentes com história de embolia pulmonar. Este medicamento contém lactose. Os doentes com problemas hereditários raros de intolerância à galactose, deficiência de lactase de Lapp, ou má absorção de glucose-galactose não devem tomar este medicamento. **INTERAÇÕES MEDICAMENTOSAS E OUTRAS FORMAS DE INTERAÇÃO** Não foram realizados estudos formais de interação para Pravafenix; contudo, a utilização concomitante das substâncias ativas em doentes em estudos clínicos não resultou em quaisquer interações inesperadas. **EFEITOS INDESEJÁVEIS** Resumo do perfil de segurança: As reações adversas mais frequentemente reportadas durante a terapia com Pravafenix são aumento das transaminases e distúrbios gastrointestinais. Em ensaios clínicos, mais de 1.566 doentes receberam Pravafenix. No geral, as reações adversas foram ligeiras e transitórias. As frequências das reações adversas são classificadas de acordo com o seguinte: muito frequentes (≥ 1/10), frequentes (≥ 1/100 a < 1/10), pouco frequentes (≥ 1/1000 a < 1/100), raras (≥ 1/10 000 a < 1/1000), muito raras (< 1/10 000). Doenças gastrointestinais frequentes: Distensão abdominal, dor abdominal, dor abdominal superior, obstipação, diarreia, boca seca, dispepsia, eructação, flatulência, náuseas, desconforto abdominal, vómitos. Afeções hepatobiliares frequentes: Aumento das transaminases. Observaram-se aumentos clinicamente importantes da creatina fosfoquinase (CK ≥ 5 vezes o LSN, < 10 vezes o LSN sem sintomas musculares) em 0,38 % dos doentes tratados com Pravafenix. Observou-se um aumento clinicamente importante (CK ≥ 10 vezes o LSN sem sintomas musculares) em 0,06 % dos doentes tratados com Pravafenix. Reações hepáticas: Observaram-se aumentos clinicamente importantes das transaminases séricas (ALT e/ou AST ≥ 5 vezes o LSN) em 0,38 % dos doentes tratados com Pravafenix. As seguintes reações adversas foram notificadas com algumas estatinas: - Pesadelos - Perda de memória - Depressão - Casos excecionais de doença pulmonar intersticial, sobretudo com a terapêutica a longo prazo. - Diabetes Mellitus: a frequência dependerá da existência ou ausência de fatores de risco (glucose em jejum ≥ 5,6 mmol/L, IMC (índice de massa corporal) > 30 kg/m2, triglicéridos aumentados, historial de hipertensão) Notificação de suspeitas de reações adversas A notificação de suspeitas de reações adversas após a autorização do medicamento é importante, uma vez que permite uma monitorização contínua da relação benefício-risco do medicamento. Pede-se aos profissionais de saúde que notifiquem quaisquer suspeitas de reações adversas diretamente ao INFARMED, I.P.: INFARMED, I.P. -Direção de Gestão do Risco de Medicamentos - Parque da Saúde de Lisboa, Av. Brasil 53, 1749-004 Lisboa. Tel: +351 21 798 71 40 Fax: + 351 21 798 73 97 Sítio da internet: http://extranet.infarmed.pt/page.seram.frontoffice.seramhomepage E-mail: farmacovigilancia@infarmed.pt **DATA DA REVISÃO DO TEXTO:** Maio 2020. Informação pormenorizada sobre este medicamento está disponível na Internet no site da Agência Europeia de Medicamentos http://www.ema.europa.eu. Para mais informações deverá contactar o titular da autorização de introdução no mercado. MSRM. Medicamento comparticipado escalão C. **REFERÊNCIAS BIBLIOGRÁFICAS:** 1 - Farnier M, Ducobu J, Bryniarski L. Long-term safety and efficacy of fenofibrate/pravastatin combination therapy in high risk patients with mixed hyperlipidemia not controlled by pravastatin monotherapy.Current Medical Research & Opinion Vol. 27, No. 11, 2011, 1–9 15. 2 - Farnier M. Pravastatin and fenofibrate in combination (PRAVAFENIX) for the treatment of high-risk patients with mixed hyperlipidemia. Expert Rev Cardiovasc Ther 2012; 10(5):565-575. 3 - Farnier M, Macereuil D, De Niet S, Ducobu J, Steinmetz A, Retterstol K et al. Safety of a fixed-dose combination of fenofibrate/pravastatin 160 mg/40 mg in patients with mixed hyperlipidemia. A pooled analysis from a database of clinical trials. Clin Drug Investig 2012; 32(4):281-291. 4 - European Patent Specification EP 1414496B1, EP080156282, EP1651194B1. [Data on file] Tecnimede.

HDL-c: colesterol HDL; **TG:** Triglicéridos; **LDL-c:** colesterol LDL; **não-HDL-c:** colesterol não HDL

TPRAV164A1CG, revisto em julho/2016, revalidado anualmente

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Conclusions: Among patients receiving a defibrillator lead, only pacing threshold showed results in favour of septal lead placement. The comparison between apical and septal RV location did not affect significantly other lead parameters, lead performance or echocardiography results during the long-term follow-up. Therefore, potential risks and benefits of RV defibrillator placement should be carefully weighed.

CO 60. LONG-TERM OUTCOMES IN PATIENTS WITH POTENTIAL REVERSIBLE CAUSES OF BRADYCARDIA

Mariana Passos[1], Inês Fialho[1], Joana Lima Lopes[2], Daniel Faria[1], João Baltazar[2], Marco Beringuilho[1], Hilaryano Ferreira[2], Carlos Morais[1], João Bicho Augusto[1]

[1]Hospital Amadora Sintra. [2]Hospital Prof. Doutor Fernando Fonseca.

Introduction: Hyperkalemia and negative chronotropic drugs are well known causes of reversible bradycardia. Their synergic combination may result in BRASH syndrome (Bradycardia, Renal failure, Atrioventricular blockade, Shock, and Hyperkalemia), a consequence of the vicious cycle between bradycardia, renal failure and worsening hyperkalemia, leading ultimately to multiorgan dysfunction. In potentially reversible bradycardia, drug discontinuation or metabolic correction is recommended before permanent pacemaker (PPM) implantation.
Objectives: To determine the long-term prognosis in patients with potentially reversible symptomatic bradycardia.
Methods: We retrospectively reviewed 176 patients who presented to the emergency department with symptomatic bradycardia, between January 2015 and August 2016. Patients without any reversible cause of bradycardia were excluded. Participants were stratified into three groups according to the reversible causes of bradycardia: patients with hyperkalemia, with or without acute renal injury (ARI) (group 1); patients taking negative chronotropic drugs, with or without ARI (group 2); patients with BRASH syndrome (combination of hyperkalemia and negative chronotropic drugs, with or without ARI) (group 3). The primary endpoint was PPM implantation after discharge. Secondary endpoints included: bradycardia-related rehospitalization, heart failure (HF) hospitalization, all-cause mortality and a composite of all the previous endpoints.
Results: A total of 105 patients were included (52.4% female; mean age 79.8 ± 8.6 years). Group 1 was comprised by 15 patients (14.3%), group 2 by 69 patients (65.7%) and group 3 by 21 patients (20%, figure 1A). The incidence of each event is presented in figure 1B. During a mean follow-up of 3.2 ± 2.1 years, PPM was implanted in 60 patients (57.1%)-51 during hospital stay (85%) and 9 after discharge (15%). Across all groups, approximately 50% of the patients needed PPM implantation at some point, without significant differences between groups (p = 0.508). Group 3 had the lowest need of in-hospital PPM (38.1%) but the highest bradycardia-related readmissions (9.5%). Nevertheless, post-discharge PPM implantation was still higher in group 1 (33.3%), followed by group 3 (22.2%). There were no significant differences in the post-discharge PPM implantation rate between groups (p = 0.76). In groups 1 and 3 the composite endpoint (73.3% and 76.2%, respectively) was significantly more frequent than in group 2 (44.9%, p = 0.046 and p = 0.012, respectively).
Conclusions: Nearly half of the patients with an episode of reversible bradycardia needed a PPM at some point. Given the advanced age of most patients with bradycardia secondary to metabolic derangement and/or drug toxicity, it is possible that this unveils underlying conduction system disease, which is likely to recur without PPM implantation.

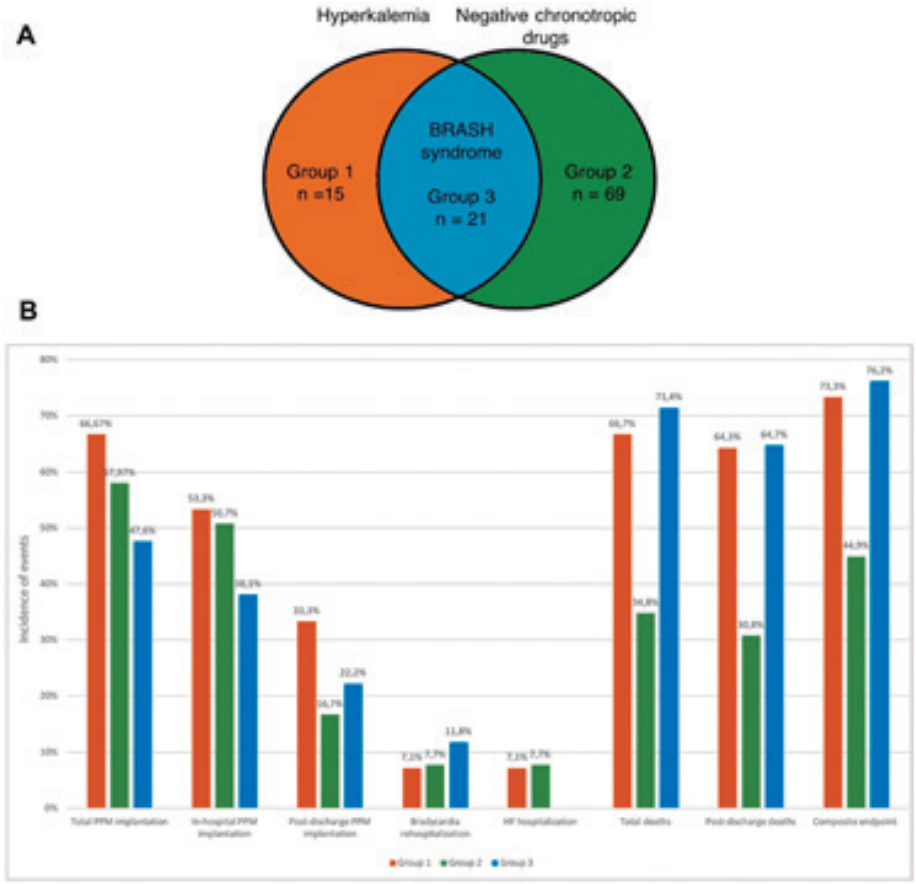

Figure 1) **A:** Study groups distribution. **B:** Proportion of events across all groups.

CO 60 Figure

CO 61. ATRIOVENTRICULAR SYNCHRONOUS PACING USING A LEADLESS VENTRICULAR PACEMAKER: SINGLE CENTRE EXPERIENCE

Pedro M. Lopes, Diogo Cavaco, João Carmo, Pedro Carmo, Francisco M. Costa, Pedro Galvão Santos, Francisco B. Morgado, Sérgio Fartouce, Isabel Santos, Gustavo R. Rodrigues, Daniel N. Matos, Miguel Mendes, Pedro Adragão

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Introduction: Despite many advantages, leadless pacemakers are currently only capable of single-chamber ventricular pacing. More recently it was developed a new software to detect atrial contraction using a 3-axis accelerometer enabling AV synchronous pacing.
Objectives: To evaluate the feasibility of AV synchronous pacing in leadless pacemaker.
Methods: This is a prospective single centre registry enrolling 11 consecutive patients with AV block referred to leadless pacemaker Micra™ with AV synchronous algorithm (VDD). Baseline, procedural and follow-up data were collected. The last segment of cardiac activity in accelerometer signal (A4) which corresponds to atrial contraction was measured in amplitude. Atrioventricular synchrony (AVS) was measured during 30 minutes of rest (Holter monitor) in patients with complete or high-degree AV block and was defined as a P wave visible on surface ECG followed by a ventricular event < 300 ms.
Results: The mean age was 78 ± 10 years and 73% were male. Complete or high-degree AV block was present in 5 patients, whereas 6 patients had predominantly intrinsic conduction. The mean pacing threshold during implantation was 0.71 ± 0.34 V @ 0.24 ms. No major complications were reported. The mean follow up was 118 ± 76 days. The mean pacing threshold during follow-up was 0.84 ± 0.63 V @ 0.24 ms. The mean A4 amplitude was 1.7 ± 1.9 m/s. The average AM-VP measured in office was 74% in patients with complete or high-degree AV block. After programming, the average AVS in complete or high-degree AV block measured with Holter monitor was 93%. No patient showed sinus disease.
Conclusions: Leadless pacemaker with accelerometer-based atrial sensing is feasible and had a high AVS, similar to conventional VDD pacemakers with the advantages of leadless pacing.

Sábado, 01 Maio de 2021 | 15H00-16H15

Sala Virtual 3 | CO 12 - Cardiologia preventiva/reabilitação

CO 67. EXERCISE OSCILLATORY VENTILATION DISTURBANCES: FINDING ORDER AMONGST CHAOS

Gonçalo Lopes da Cunha, Bruno Rocha, Sérgio Maltês, Pedro Freitas, Francisco Gama, Maria João Andrade, Carlos Aguiar, Luís Moreno, Anaí Durazzo, Miguel Mendes

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Introduction: Exercise Oscillatory Ventilation (EOV) during Cardiopulmonary Exercise Test (CPET) predicts prognosis in patients with Heart Failure (HF). In these patients, O_2 consumption (VO_2) oscillations have also been described, possibly secondary to circulatory delay. We hypothesize that in clinically meaningful EOV, cardiac output variation is mirrored by VO2 oscillation, which is then chronologically followed by a similar oscillation in minute ventilation (VE) (Figure 1). Accordingly, we aimed to assess whether this new definition surpassed that of classical EOV.
Methods: This is a single-centre cohort study of consecutive patients undergoing CPET from 2016-2018. Patients with LVEF >50% were excluded. CPET was performed on a treadmill to the limit of tolerance. Data was collected as a rolling average of 20 seconds and a composite VE/time and VO2/time plot was created. Classical EOV was defined as three or more regular oscillations of the VE graph with a minimal average amplitude of five litters. The addition of exercise VO2-to-VE peak-to-peak ventilation asynchrony (EVA) to the previous criteria fulfilled the new definition. The primary endpoint was a composite of time to all-cause death, heart transplantation or HF hospitalization.
Results: Overall, 177 patients were enrolled (mean age 58 ± 11 years, LVEF 34 ± 9%), of whom 35 had EOV and 17 had EVA. Compared to those without EVA, patients with EVA had markers of more severe HF (table I). During a median follow-up of 32 (21-42) months, 55 patients met the primary outcome (32 all-cause deaths, 15 heart transplants, 47 HF hospitalizations). In multivariate analysis, EVA was associated with a 2.5-fold increased risk of events (HR 2.489; 95%CI: 1.302-4.759; p = 0.006), adjusted for peak VO2, VE to CO_2 production ratio (VE/VCO_2 slope) and LVEF. EVA outperformed EOV in predicting the primary endpoint at 1 year, with a similar sensitivity and higher specificity (96.2 vs. 83.2%). The rate of events between the subgroup of patients without EVA was similar regardless of presence of EOV, contrasting with a higher rate in the EVA subgroup (figure 1).

	Total (n=177)	No EOV (n=142)	EOV without EVA (n=18)	EOV with EVA (n=17)	P-value
- Baseline Characteristics					
Age, mean ± SD (years)	58 ± 11	58 ± 12	61 ± 8	60 ± 8	0,601
Male sex, n (%)	134 (75,7)	109 (76,8)	12 (66,7)	13 (76,5)	0,641
NYHA Class I NYHA Class II NYHA Class III NYHA Class IV	34 (19,2) 77 (43,5) 65 (36,7) 1 (0,6)	32 (22,5) 64 (45,1) 45 (31,7) 1 (0,7)	2 (11,1) 10 (55,6) 6 (33,3) 0 (0,0)	0 (0) 3 (17,6) 14 (82,4) 0 (0,0)	0,004
BMI, mean ± SD (Kg/m²)	26,9 ± 4,5	27,2 ± 4,5	26,0 ± 5	24,9 ± 3,7	0,095
- HF Characteristics					
Ischemic HF, n (%)	119 (67,2)	96 (67,6)	14 (77,8)	9 (52,9)	0,287
LVEF, mean ± SD (%)	34 ± 9	35 ± 9	36 ± 10	24 ± 6	<0,001
RV Dysfunction, n (%)	51 (29,0)	37 (26,2)	4 (22,2)	10 (58,8)	0,016
- CPET Characteristics					
pVO2, mean ± SD (mL/min)	17,8 ± 5,7	18,2 ± 5,9	18,8 ± 4,9	13,8 ± 2	0,007
ppVO2, mean ± SD (%)	0,7 ± 0,3	0,7 ± 0,3	0,8 ± 0,2	0,5 ± 0,1	0,036
VE / VCO2 Slope, mean ± SD	41,9 ± 12,6	40,3 ± 12,3	40,7 ± 6,4	56,2 ± 11,3	<0,001
RER, mean ± SD	1,1 ± 0,1	1,1 ± 0,1	1,1 ± 0,1	1,1 ± 0,2	0,663
- Laboratory Evaluation					
Creatinine, mean ± SD (mg/dL)	1,2 ± 0,9	1,2 ± 1	1,2 ± 0,6	1,3 ± 0,5	0,856
NTproBNP, mean ± SD (pg/mL)	2055 ± 3510	1927 ± 3570	933 ± 1579	4419 ± 3691	0,009
- Outcomes of interest					
All-cause death, n (%)	32 (18,1)	24 (16,9)	1 (5,6)	7 (41,2)	0,017
Heart transplant, n (%)	15 (8,5)	9 (6,3)	0 (0,0)	6 (35,3)	<0,001
Urgent heart transplant, n (%)	9 (60,0)	6 (66,7)	0 (0,0)	3 (50)	0,519
HF Hospitalization, n (%)	47 (26,6)	32 (22,5)	1 (5,6)	14 (82,4)	<0,001

Table I: Population Demographics.

BMI = Body Mass Index;
EOV = Exercise Oscillatory Ventilation;
EVA = exercise VO2-to-VE peak-to-peak ventilation asynchrony;
HF = Heart Failure;
HR = Heart Rate;
LVEF = Left Ventricular Ejection Fraction;
SD = Standard Deviation;
pVO_2 = peak oxygen uptake (mL/min);
$ppVO_2$ = peak oxygen uptake (% of predicted pVO_2);
RER = Respiratory Exchange Rate;

Figure 1

Conclusions: EVA is a strong predictor of hard outcomes in a broad population with HF. The new definition may outperform that of classical EOV. The incidence and prognostic value of EVA in the management algorithm and risk stratification of patients with HF is worth being further explored.

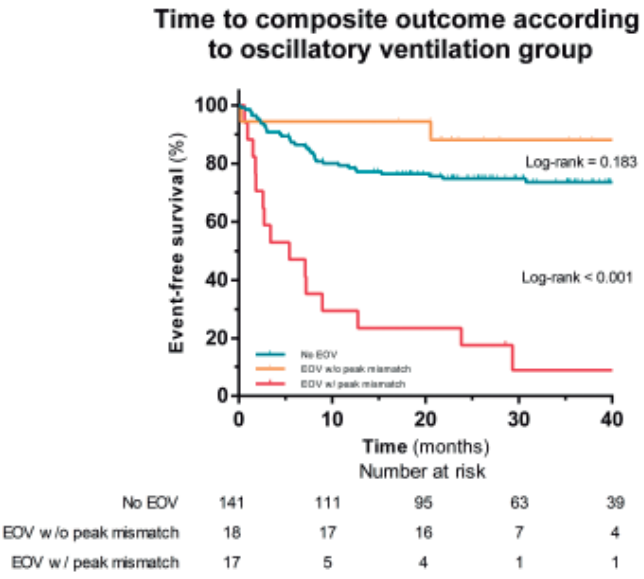


Figure 1: Kaplan-Meier curves for the primary endpoint in the subgroup of patients with EVA (EOV with peak mismatch) and EOV without EVA (EOV without peak mismatch).

Yellow Line = EOV without EVA
Blue Line = no EOV
Red Line = EVA

CO 67 Figure 2

Variables - Model	Univariate analysis			Multivariate analyses		
	HR	95% CI	p-value	HR	95% CI	p-value
pVO2, per 1mL/min	0.796	0.740-0.855	<0.001	0.870	0.791-0.956	0.004
VE/VCO2, per 1 unit	1.063	1.046-1.080	<0.001	1.027	1.004-1.049	0.019
LVEF, per 1%	0.899	0.870-1.080	<0.001	0.937	0.899-0.976	0.002
Presence of EVA	6.483	3.451-11.870	<0.001	2.489	1.302-4.759	0.006

Table II: Multivariate Model to predict the primary endpoint.

CO 67 Figure 3

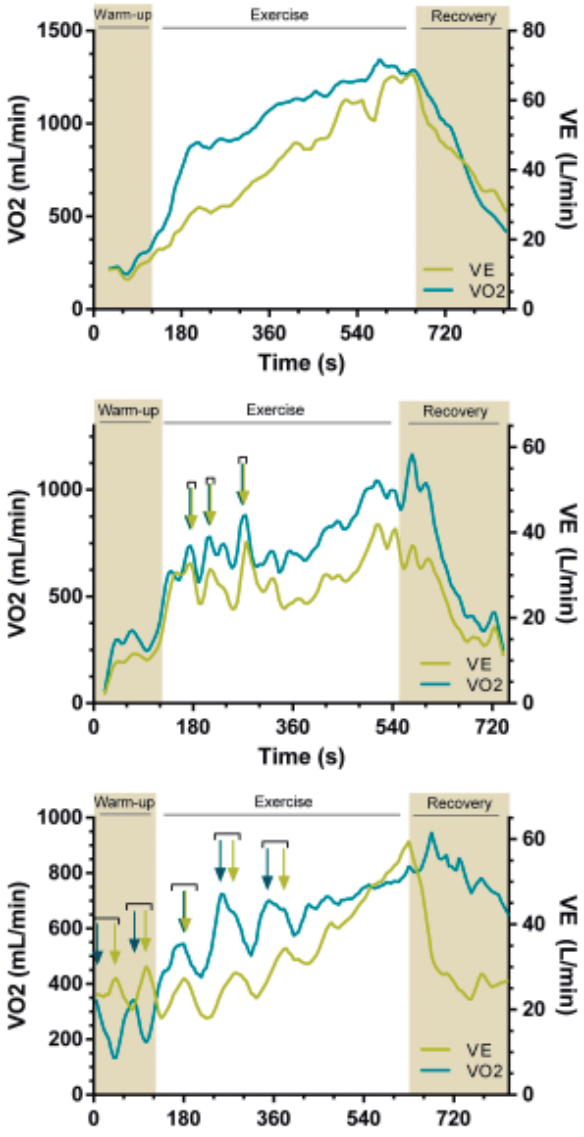


Figure 2: Illustrative CPET Data-Plot: (A) no EOV; (B) EOV without EVA; (C) EVA.

CO 67 Figure 4

CO 64. CARDIOPULMONARY EXERCISE TEST AND SUDDEN CARDIAC DEATH RISK IN HEART FAILURE WITH REDUCED EJECTION FRACTION PATIENTS

Sofia Jacinto, João Reis, Alexandra Castelo, Pedro Brás, Rita Ilhão Moreira, Tiago Pereira Silva, Ana Timóteo, Rui Soares, Bárbara Teixeira, Rita Teixeira, Rui Cruz Ferreira

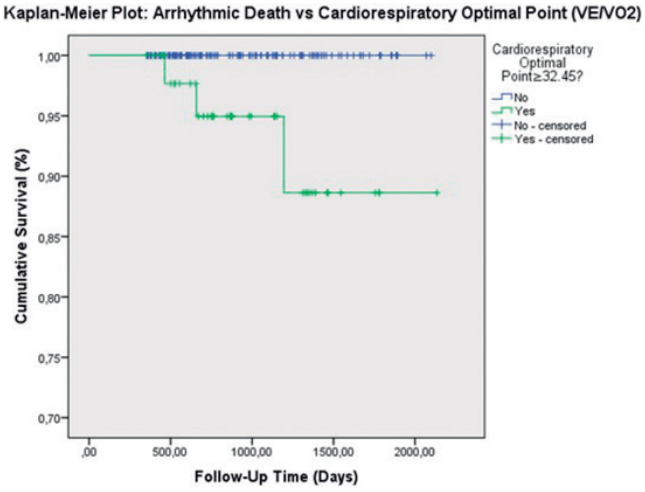
Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction and objectives: Several variables obtained from cardiopulmonary exercise testing (CPET) are strong predictors of overall mortality in chronic heart failure (CHF) patients (pts). However, despite the fact that up to 50% of CHF patients die from sudden cardiac death (SCD), it is unknown whether any of these variables predict SCD. Our aim is to determine the ability of CPET-derived variables of predicting SCD in pts with CHF.

Methods: Retrospective evaluation of adult pts with HFrEF submitted to cardiopulmonary exercise test in a tertiary centre. Patients were followed up for at least 1 year for the primary endpoint of SCD. Pts that died from pump failure or other causes were excluded from analysis. Cox univariate and multivariate regression analysis were used to determine predictors of SCD. The predictive power of several CPET parameters was analysed (area under the curve - AUC). ROC curves were compared using the Hanley and McNeil test.

Results: CPET was performed in 487 HF pts, of which 72 pts that died from pump failure or other causes were excluded. 21 pts met the primary endpoint during a mean follow-up of 91.4 ± 67 months. These pts presented a higher prevalence of chronic kidney disease (57.9% vs 31.1%, p = 0.015), a lower mean natremia (138.4 vs 136.1, p < 0.001), were more symptomatic (42.9% were in NYHA Class III-IV as opposed to 23.6% in the survivors group) and had a lower heart failure survival score (8.19% vs 8.71%, p = 0.030) and LVEF (23.4% vs 30.5%, p < 0.001) compared to subjects who didn't experience arrhythmic deaths. Interestingly there was no difference in age (58.9 vs 55.5, p = 0.226) nor in the prevalence of atrial fibrillation (p = 0.293) or ischemic cardiomiopathy (p = 0.282). There was no statistically significant difference in the peak oxygen consumption (pVO2 - 16.5 vs 18.6, p = 0.074). Several CPET parameters were predictors of SCD, but the one with the

highest predictive value was the cardiopulmonary optimal point (VE/VO2), which was significantly higher than the one of pVO2 (AUC of 0.883 vs 0.599, p = 0.048). A VE/VO2 cut-off of 32.45 had a 100% sensitivity and 75% specificity for the occurrence of SCD, with pts above this value presenting a significantly higher incidence of SCD (log rank p = 0.006). Both natremia (HR 0.86, 0.75-0.98, p = 0.026) and LVEF (HR 0.91. 0.86-0.97, p = 0.002) were independent predictors of SCD. Beta blockers use was associated with a protective effect regarding SCD.



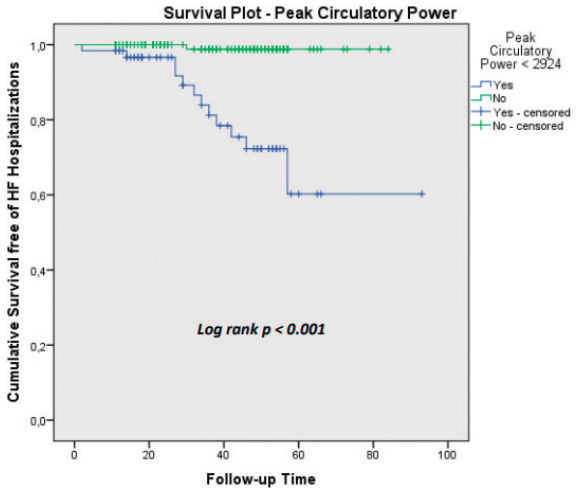
Conclusions: VE/VO2 has a high predictive value for SCD in patients with CHF and might be an additional tool for prioritization of antiarrhythmic strategies.

CO 66. PEAK CIRCULATORY POWER IS A STRONG PROGNOSTIC FACTOR IN PATIENTS UNDERGOING CARDIAC REHABILITATION

Bárbara Lacerda Teixeira, João Reis, Alexandra Castelo, Pedro Rio, Sofia Silva, Rita Teixeira, Sofia Jacinto, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Peak circulatory power (PCP - peak oxygen uptake × peak systolic blood pressure) is and has been used for the clinical evaluation of patients with heart failure, coronary artery disease and idiopathic pulmonary arterial hypertension, being a strong prognostic factor in these populations.
Objectives: To characterize the population of the cardiac rehabilitation (CR) appointment that performed CEPT, evaluate PCP as a predictor of events and determine the best cut off for our population.
Methods: Retrospective analysis of CR appointment patients who performed CEPT between 2014 and 2017 in a single tertiary center. Epidemiological, clinical, laboratory, echo and CEPT-related data were retrieved. We then determined predictors of PCP and established the appropriate Cut Off for our population and compared the occurrence of events - composite endpoint of mortality/hospitalization due to heart failure (MH) - according to it.
Results: 207 P (83.6% men) were included, with a mean age of 57 years and a mean follow-up time of 36 months. The Ps presented a mean LVEF of 53.7% (14-83%). The majority (87.9%) was referred for CR with ischemic cardiopathy (AMI or stable or unstable coronary disease), 9.2% with heart failure and 9.2% with valvulopathy. 6.9% P died from any cause, 33.8% had an hospitalization (78.6% from a cardiovascular reason) and 7.3% presented MH. Mean PCP was 3,702.5 ± 1,974.2 mmHg.ml.kg^{-1}min^{-1} (249-23,180) and in Ps with heart failure was 1,989 as opposed to 3,858 in Ps without heart failure. A lower PCP was associated with an age > 65 years (p < 0.001), female sex (p = 0.02), diabetes (p = 0.005), previous acute coronary syndrome (p = 0.021), LVEF < 35% (p < 0.001), a higher basal BNP value (CC = 0.287, p < 0.001), higher VE/VCO2 slope (CC = -0.298, p < 0.001) and a more negative basal global longitudinal strain (CC = 0.353, p < 0.001). Ps with a peak VO2 < 14 ml/min/kg also presented a lower PCP (a peak VO2< 14 ml/min/kg). Values of PCP below a cut-off of 2,924 predict the composite endpoint of MH (HR 28.1, IC [3.66-216.29], p = 0.001), with these Ps presenting a 40 months survival of 75.4% comparing to 98.8% in Ps with PCP values above the aforementioned cut-off (log-rank p < 0.001). However, that cut-off didn't correlate with all cause hospitalization, need for further coronary revascularization or cardiac device.



Conclusions: PCP was predictor of cardiac events in our population, with Ps with a PCP value< 2,924 presenting a statistically significant lower survival.

CO 68. HOME-BASED CARDIAC REHABILITATION - THE REAL BARRIERS OF PROGRAMS AT DISTANCE

Ana Margarida Martins[1], Inês Aguiar-Ricardo[1], Nelson Cunha[1], Tiago Rodrigues[1], Pedro Silvério António[1], Sara Couto Pereira[1], Joana Brito[1], Pedro Alves da Silva[1], Beatriz Valente Silva[1], Beatriz Garcia[1], Catarina Oliveira[1], Rita Pinto[1], Madalena Lemos Pires[1], Olga Santos[1], Paula Sousa[1], Fausto J. Pinto[1], Ana Abreu[1]

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Introduction: Despite established benefits of cardiac rehabilitation (CR), it remains significantly underutilized. Home-based CR (CR-HB) programs should offer the same core CR components as Centre-based programs (CR-CB) but several aspects need to be adapted, communication and supervision involves several important issues. Although CR-HB has been successfully deployed and is a valuable alternative to CR-CB, there is less structured experience with these programs and further studies are needed to understand which patients (pts) are indicated to this type of program.
Objectives: To investigate patient-perceived facilitators and barriers to CR-HB.
Methods: Prospective cohort study of pts who were participating in a CR-CB program and accepted to participate in a CR-HB program after CR-CB closure due to COVID-19. The CR-HB consisted in a multidisciplinary digital program, including pt risk evaluation and regular assessment, exercise, educational and psychological sessions. The online exercise training sessions consisted of recorded videos and real time online supervised exercise sessions. It was recommended to do each session 3 times per week, during 60 min. A pictorial exercise training guidebook was available to all pts including instructions regarding safety, clothing and warm-up, and a detailed illustrated description of each exercise sessions. Also, for questions or difficulties regarding the exercises, an e-mail and telephone was provided. Once a month, real time CR exercise sessions through a device with internet access was provided.
Results: 116 cardiovascular disease (CVD) pts (62.6 ± 8.9 years, 95 males) who were attending a face-to-face CR program were included in a CR-HB

program. The majority of the pts had coronary artery disease (89%) and 5% valvular disease. Regarding risk factors, obesity was the most common (75%) followed by hypertension (60%), family history (42%), dyslipidaemia (38%), diabetes (18%), and smoking (13%). 47% of the participants did at least 1 online exercise training session (ETS) per week: 58% did 2-3 times per week, 27% once per week and 15% more than 4 times per week. Participants who did less than 1 ETS per week reported as cause: lack of motivation to train alone (38%), preference of a different mode of exercise training in the exterior space (26%), other reasons (19%), technology barrier such as impossibility to stream online videos (11%), fear of performing exercise without supervision (4%), and limited space at home to perform the exercise training sessions (4%).
Conclusions: Our study based on real-life results of a CR-HB program shows a sub-optimal rate of participation in exercise sessions mainly for the lack of motivation to exercise alone or preference for walking/jogging in exterior space. The knowledge of the CR-HB program barriers will facilitate to find out strategies to increase the participation rate and to select the best candidates.

CO 63. PREDICTIVE ABILITY OF CARDIOPULMONARY EXERCISE TEST PARAMETERS IN HEART FAILURE PATIENTS WITH CARDIAC RESYNCHRONIZATION THERAPY

João Pedro Reis, António Gonçalves, Pedro Brás, Rita Moreira, Pedro Rio, Tiago Pereira da Silva, Ana Teresa Timóteo, Rui Soares, Rui Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

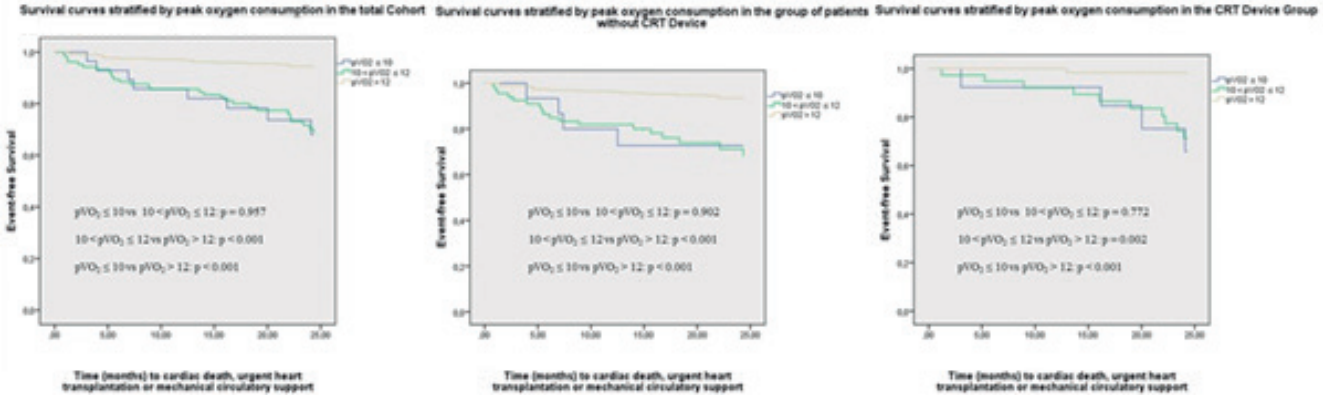
Introduction: There is evidence suggesting that a peak oxygen uptake (pVO_2) cut-off of 10 ml/kg/min provides a more precise risk stratification in Cardiac Resynchronization Therapy (CRT) patients. Our aim was to compare the prognostic power of several cardiopulmonary exercise testing (CPET) parameters in patients with CRT and assess the discriminative ability of the guideline-recommended pVO_2 cut-off values.
Methods: Prospective evaluation of consecutive heart failure (HF) patients with left ventricular ejection fraction ≤ 40%. The primary endpoint was a composite of cardiac death and urgent heart transplantation (HT) in the first 24 follow-up months and was analyzed by several CPET parameters for the highest area under the curve (AUC) in the CRT group. A survival analysis was performed to evaluate the risk stratification provided by several different cut-offs.
Results: A total of 450 HF patients, of which 114 had a CRT device. These patients had a higher baseline risk profile, but there was no difference regarding the primary outcome (13.2% vs 11.6%, p = 0.660). End-tidal carbon dioxide pressure at the anaerobic threshold ($P_{ET}CO_{2AT}$) had the highest AUC value, which was significantly higher than that of pVO_2 in the CRT group (0.951 vs 0.778, p = 0.046). The currently recommended pVO_2 cut-off provided accurate risk stratification in this setting (p < 0.001), and the suggested cut-off value of 10 ml/min/kg did not improve risk discrimination in device patients (p = 0.772).
Conclusions: $P_{ET}CO_{2AT}$ outperforms pVO_2's prognostic power for adverse events in CRT patients. The current guideline-recommended pVO_2 cut-off can precisely risk-stratify this population.

CO 65. ESTIMATING PVO2 AND PROGNOSIS THROUGH CARDIAC EXERCISE STRESS TEST IN A HEART FAILURE POPULATION

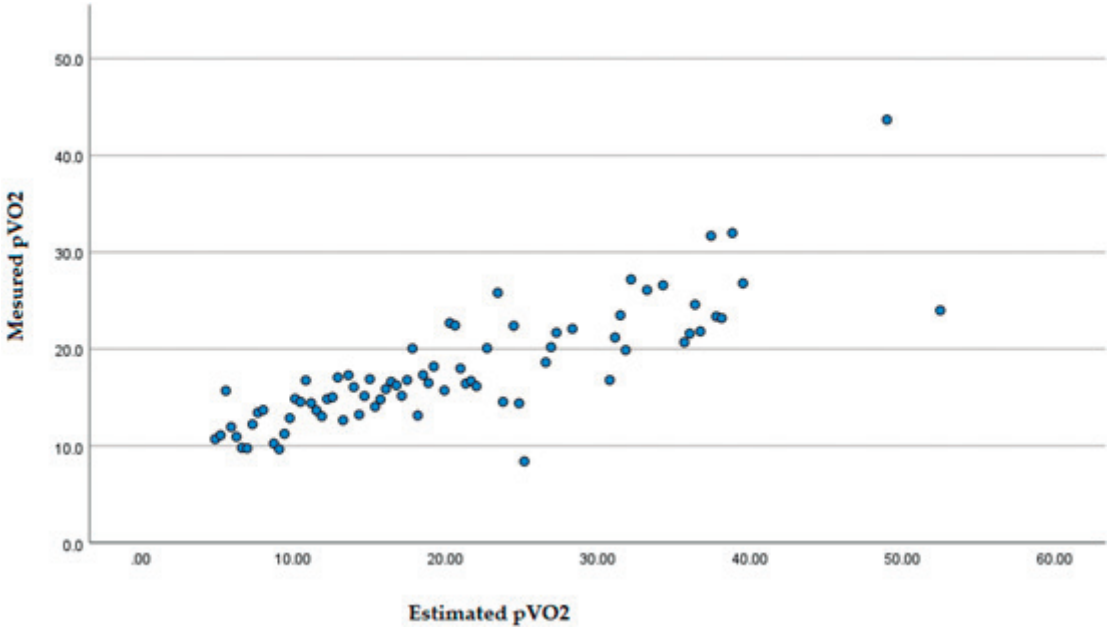
José Lopes de Almeida, J. Milner, J. Rosa, R. Coutinho, M. Ferreira, L. Gonçalves

Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: Compared with the cardiac exercise stress test, more commonly used to assess the presence of ischemia, the cardiopulmonary exercise test has the advantage of providing expired gas analysis. According to current guidelines, cardiopulmonary exercise testing should be considered to stratify the risk of adverse events and to provide measures of survival improvement in heart failure populations. However, cardiac exercise stress test is more readily available and widespread than cardiopulmonary exercise testing. We aimed to compare prognostic information given by estimated pVO2-which can be obtained from cardiac exercise stress test-and real measured pVO2-which requires cardiopulmonary exercise test-in a heart failure population.
Methods: We conducted a retrospective analysis of 214 patients with HF underwent cardiac exercise stress test and accessed their 5 year survival. Non-urgent transplanted (UNOS Status 2) patients were censored alive on the date of the transplant. During the cardiopulmonary exercise test, cardiac exercise stress test data simultaneously collected. Based on protocol stage achieved, estimated METs were used to calculate estimated pVO2 (pVO2 = estimated METs × 3.5). Estimated and real pVO2 were correlated using Pearson correlation and the age-adjusted prognostic power of each was determined using Cox proportional hazards analysis.
Results: 164 patients were male (77%) and the mean age of the population was 56 ± 10 years. 78 (36%) patients had an ischemic etiology. Within 5 years from testing, 46 patients died (21.5%) and 55 patients (26%) were transplanted. Naughton modified (n = 165) was the most commonly used protocol, followed by Naughton (n = 39) and Bruce (n = 10). Estimated pVO2 and measured pVO2 correlated significantly (R = 0.66, p < 0.01) (Figure). Both estimated (HR = 0.91, 95%CI 0.86-0.95, p < 0.01) and measured pVO2 (HR = 0.86, 95%CI 0.80-0.91, p < 0.01) strongly predicted prognosis in this population.
Conclusions: Estimated pVO2 correlated with measured pVO2 and strongly predicted prognosis in this heart failure population. Because it can be obtained from conventional cardiac exercise testing, it may become an alternative prognostic tool to cardiopulmonary testing.



CO 63 Figure



CO 65 Figure

Sábado, 01 Maio de 2021 | 16H45-17H45

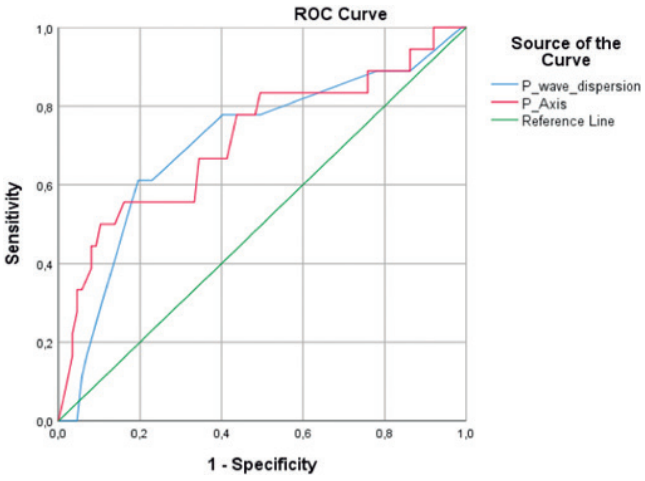
Sala Virtual 1 | CO 13 - Atrial fibrillation

CO 72. ELECTROCARDIOGRAPHIC MARKERS OF INCIDENT ATRIAL FIBRILLATION IN PATIENTS WITH CRYPTOGENIC STROKE

Sara Couto Pereira[1], Arminda Veiga[2], José Ferro[1], Fausto J. Pinto[2], Catarina Fonseca[1], Ana G. Almeida[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Prolonged screening of AF in patients (pts) with cryptogenic stroke is recommended and electrocardiographic markers of atrial remodeling, like p-wave dispersion, have been described in literature. Electrocardiographic changes in pts with cryptogenic stroke to predict AF in the follow up are not well-established.
Objectives: To identify ECG predictors of AF in a subset of pts with cryptogenic stroke.
Methods: Prospective single-center study that included consecutive pts admitted with cryptogenic stroke. A surface 12-lead ECG was performed at admission, recorded at 25 mm/second and 10 mV/cm with commercially available imaging system. P-wave analysis of maximum (P max) and minimum (P min) duration, p-wave dispersion (PWD, defined as the difference between the P max and P min, being abnormal if > 40 msec) and amplitude were evaluated by a two independent operator. P-wave axis was determined by an automated mode available in the equipment. ROC curve was analyzed to determine the optimal cut-off values.
Results: We enrolled 105 pts (55.2% males), with mean age of 68.18 ± 8.83 years, 79% had hypertension, 18.1% had diabetes, 44.8% with dyslipidemia, 21% current smokers. During follow up period, 18 pts (17.1%) developed AF. We found that only PWD (AUC 0.706, IC95%: 0.564-0.848, p = 0.006) and P-wave axis (AUC 0.715, IC95%: 0.870-0.860, p = 0.004) were strong predictors of AF (Figure). PWD cut-off of 47.50 presented a sensitivity of 77.8% and specificity of 59.8% and P-wave axis cut off value of 75.50 had a specificity of 95.4%. Age (p = 0.032) and current smoking (p = 0.014) were associated with occurrence of AF during the follow up.



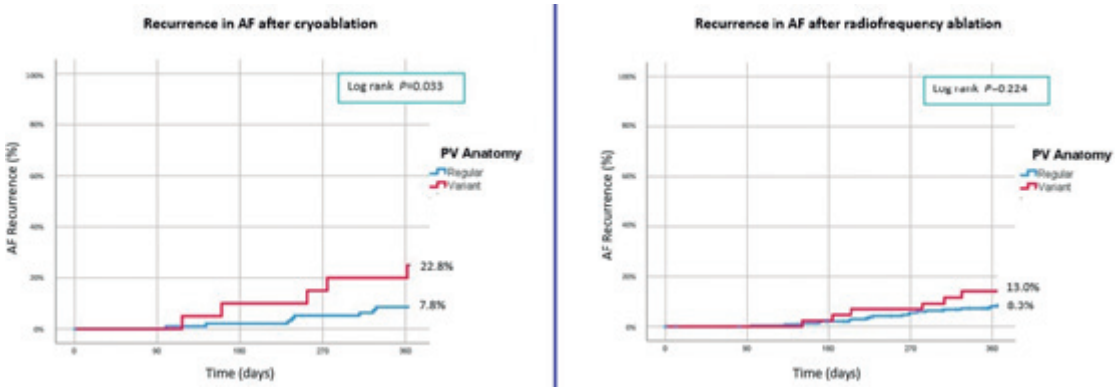
Conclusions: PWD and P-wave axis predicted incident AF in this subset of pts with cryptogenic stroke. The ECG may be a toll to identify pts at risk of developing AF, although larger studies are needed to confirm these results.

CO 69. IMPACT OF PULMONARY VEINS ANATOMY ON OUTCOME OF CRYOABLATION OR RADIOFREQUENCY CATHETER ABLATION FOR ATRIAL FIBRILLATION

Gualter Santos Silva, Pedro Ribeiro Queirós, Mariana Ribeiro da Silva, Rafael Teixeira, João Almeida, Paulo Fonseca, Marco Oliveira, Helena Gonçalves, João Primo, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: Pulmonary vein isolation is the cornerstone of interventional treatment of atrial fibrillation (AF). Pulmonary veins frequently display anatomic variants. If this influences the recurrence of AF after catheter ablation is still a matter of debate.



CO 69 Figure

Objectives: Our aim was to determine if pulmonary vein anatomy variants influences the recurrence of AF after catheter ablation with radiofrequency or cryoablation.
Methods: Retrospective analysis of patients with paroxysmal or persistent atrial fibrillation who underwent pulmonary vein isolation by radiofrequency (RF) or cryoablation (CA) in a single center between January 2017 and September 2019. All patients underwent computed tomography before AF ablation. Within each treatment group (RF or CA), patients were stratified according to their PV anatomy in: regular (2 left PVs and 2 right PVs) or variant (left common trunk, right common trunk, bilateral common trunk, right intermediate branch or other). The primary end-point was 1-year recurrence of AF. Recurrence was defined as electrical documented AF.
Results: A total of 425 patients (RF = 300 and CA = 125), aged 56.6 ± 11.7 years, 277 men (65.0%) were enrolled. The majority of patients had paroxysmal AF (n = 343, 81.5%). Mean CHA_2DS_2-VASc score was 1.12 ± 1.28. Regular PV anatomy was identified in 357 patients (84.0%), a left common trunk in 53 patients (12.5%), a bilateral common trunk in 5 patients (1.2%), a right intermediate branch in 3 patients (0.7%) and other mixed variants in 7 patients (1.6%). There were no significant differences in the baseline clinical and echocardiographic characteristics between groups. At 1-year follow-up, patients with atypical PV anatomy had more AF recurrence (regular 8.1% vs variant 16.2%; p = 0.037). Analyzing according to the ablation technique there was no difference in AF recurrence between PV anatomy groups in patients submitted to radiofrequency (regular 8.3% vs variant 13.0%; p = 0.252). On the other hand, in cryoablation group, patients with PV anatomic variant had significantly higher rates of 1-year AF recurrence (regular 7.8% vs variant 22.8%; p = 0.033).
Conclusions: The presence of atypical PVs anatomy seems to be associated with higher rates of AF recurrence at 1-year in patients undergoing cryoablation. Further prospective studies are needed to confirm the PV anatomy impact in the success of the procedure and if this needs to be accounted in the choice of ablation technique.

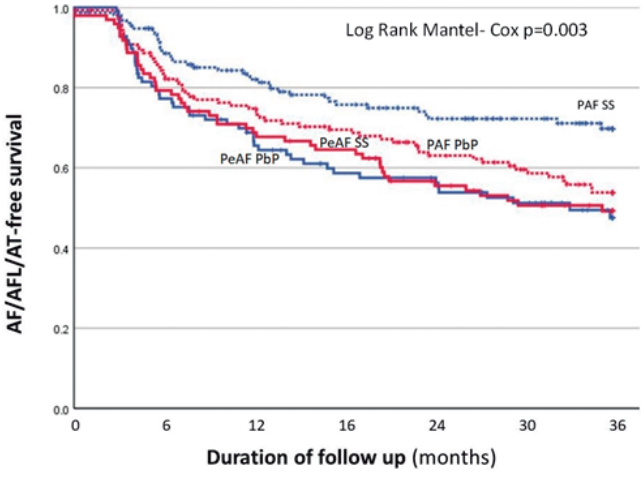
CO 70. SINGLE-SHOT COMPARED TO POINT-BY-POINT ATRIAL FIBRILLATION ABLATION SUCCESS

Rita Caldeira da Rocha[1], Rita Carvalho[2], Mafalda Carrington[1], Afonso Ferreira[3], Maria Brito[3], Gustavo Silva[3], Nuno Cortez Dias[3], Luís Carpinteiro[3], Fausto Pinto[3], João de Sousa[3]

[1]Hospital do Espírito Santo, EPE, Évora. [2]Centro Hospitalar de Leiria/ Hospital de Santo André. [3]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Pulmonary vein electrical isolation is the cornerstone in atrial fibrillation (AF) ablation. The two widely used approaches are point-by-point radiofrequency application or single-shot therapy. Catheter AF ablation is effective in restoring and maintaining sinus rhythm. However, efficacy is limited by a high rate of AF recurrence, after an initially successful procedure.

Objectives: To evaluate AF initial ablation successfulness using single-shot techniques and compare them to the conventional procedure (point-by-point using irrigated- tip ablation catheter).
Methods: We analyzed, from a single center, all patients submitted to an index AF ablation procedure and its successfulness. The last was defined as AF, atrial tachycardia or flutter recurrence (with a duration superior to 30 seconds) event-free survival, determined by Holter and/or event recorder. These exams were performed at 6 and 12months and then annually, until 5 years after the procedure.
Results: From November 2004 to November 2020, 821patients were submitted to a first AF ablation (male patients 67.2% (N = 552), mean age of 59 ± 12years old). Paroxysmal AF (PAF) was present in 62.9% (N = 516), short-duration persistent AF in 21.8% (N = 179) and long-standing persistent in 15.3% (N = 126). Ablation techniques were irrigated tip catheter point-by-point (PbP) ablation in 266 patients (32.4%) and single-shot (SS) techniques in the remaining 555 (67.6%), including PVAC in 294 (35.8%), balloon cryo-ablation in 225 (27.4%) and nMARQ in 36 (4.4%). Globally, AF ablation had a one-year success rate of 72.5%, and 56.2% at 3 years. A significant difference between AF type was found: arrhythmic recurrence risk was 58% higher in persistent AF (PeAF) (HR 1.58; 95%IC 1.22-2.04; p < 0.001). In patients presenting with PAF, success was significantly higher in those submitted to SS technique (HR: 0.69; 95%CI 0.47-0.90; p = 0.046), while those with PeAF had similar results.



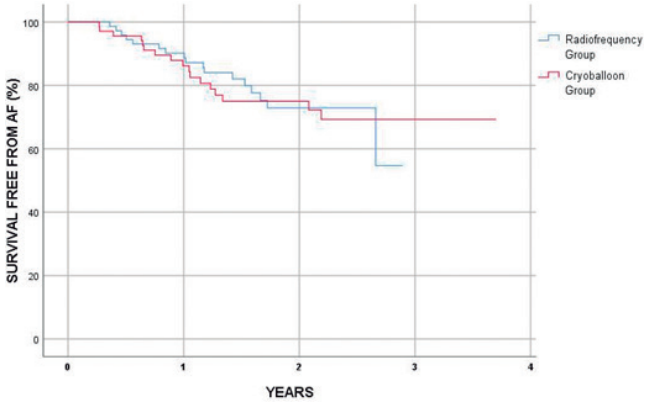
Conclusions: In this single center analysis almost three-quarters of AF patients had achieved one-year event-free survival, and more than a half reached long-term freedom from atrial arrhythmia. Patients with paroxysmal atrial fibrillation submitted to single-shot procedure had a higher success-rate. Moreover, our study confirmed previous data regarding a lower success rate in PeAF linking AF classification to the ablation outcome.

CO 71. CRYOBALLOON VERSUS RADIOFREQUENCY GUIDED BY ABLATION INDEX FOR ATRIAL FIBRILLATION ABLATION: A RETROSPECTIVE PROPENSITY-MATCHED STUDY

Pedro Ribeiro Queirós, Gualter Silva, Mariana Silva, João Almeida, Paulo Fonseca, Diogo Ferreira, Fábio Nunes, Mariana Brandão, Rafael Teixeira, Marco Oliveira, Helena Gonçalves, Nuno Dias Ferreira, João Primo, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: Radiofrequency (RF) and cryoballoon (CB) ablation are established techniques for the treatment of atrial fibrillation (AF). Randomized trials comparing them show similar success; however, studies comparing CB with RF guided by ablation index (AI) are lacking.
Objectives: To compare treatment success of CB with RF guided by AI, in patients with paroxysmal or persistent AF undergoing their first ablation procedure.
Methods: Patients undergoing AF ablation between 2017 and 2019 were retrospectively analyzed. Primary success outcome was freedom from recurrence (defined as any episode of AF, atrial flutter or atrial tachycardia lasting > 30 seconds and occurring after 91 days from ablation, or need for antiarrhythmic drugs (AAD), cardioversion or redo procedure). Secondary end-point was a composite of adverse cardiovascular (CV) outcomes (stroke/TIA, emergency room visit for AF, hospitalization for AF or CV death). Analysis was done before and after propensity score matching.
Results: A total of 316 patients were included. Mean age was 56.9 ± 11.7 years. Sixty-two percent were male (n = 196). Paroxysmal AF was present in 80.7% (n = 255), with no difference between groups. RF was used in 57.9% (n = 183) and CB in 42.1% (n = 133), with isolation of all pulmonary veins accomplished in 95.9% (n = 302), without differences between groups. Mean CHA_2DS_2-VASc score was 1.5 ± 1.3, being higher in the RF group (1.7 ± 1.3 vs 1.2 ± 1.1; p = 0.03); these patients were also older (mean age 58.1 ± 12.0 vs. 55.17 ± 11.0 years; p = 0.07), more likely to be in AF at ablation (26.7% vs. 16.5%; p = 0.006), have chronic kidney disease (40.2% vs. 23.2%; p = 0.002), anaemia (11.8% vs. 2.7%; p < 0.001), moderate/severe mitral disease (17.5% vs. 7.4%; p = 0.012) or history of atrial flutter (17.7% vs. 3.1%; p < 0.001). The CB group had longer history of AF (3.8 ± 3.5 vs. 3.0 ± 2.9 years; p = 0.041), received treatment with AAD more often (60.9% vs. 55.9%; p = 0.049) and had longer follow-up time (889 ± 397 vs. 601 ± 239 days; p < 0.001). Mean freedom from recurrence showed no significant differences between groups (1106 days for CB vs. 889 days for RF; p = 0.793), and recurrence rates were also similar (27.8% for CB vs. 23.5% for RF; p = 0.291); however, CB patients were more likely to need a redo procedure (38.3% vs. 17.4%; p = 0.025). There were no differences in the composite of adverse events or in individual outcomes. Propensity score matching was done, and 154 patients were matched 1:1 for each treatment group. Survival free from recurrence showed no differences (1,060 days for CB vs. 864 days for RF; p = 0.912), and neither did the recurrence rate. CB patients with recurrence were still more likely to need a redo procedure (37.9% vs. 11.1%; p = 0.021).



Conclusions: RF and CB result in similar survival free from AF and AF recurrence; however, recurrence in CB seems more significant, leading to higher rates of redo procedures.

CO 73. IS BALLOON CRYOABLATION EFFECTIVE IN COMMON PULMONARY TRUNK?

Pedro Silvério António[1], Tiago Rodrigues[2], Joana Brito[2], Nelson Cunha[2], Sara Couto Pereira[2], Pedro Alves da Silva[2], Beatriz Valente Silva[2], Catarina Oliveira[2], Beatriz Garcia[2], Ana Margarida Martins[2], Patrícia Teixeira[2], Gustavo Lima da Silva[2], Nuno Cortez-Dias[2], Luís Carpinteiro[2], Fausto J. Pinto[2], João de Sousa[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Common pulmonary trunk (CPT) accounts for the most frequent pulmonary vein anatomical variation. The most frequent technique used for pulmonary vein isolation (PVI) is point-by-point radiofrequency, using cryoablation (CB) is still debatable. Some few studies have shown the feasibility and safety of CB in CPT atrial fibrillation (AF) patients (pts), most of them performed angio-CT prior to ablation.
Objectives: To analyzed AF pts with and without CPT submitted to CB in regarding of success rate and safety.
Methods: Single-center retrospective study of consecutive AF pts refractory to antiarrhythmics submitted to CB between 2017 and 2020. Before the procedure auriculography was performed in all pts to verify variations in pulmonary veins, however the procedure was not modify regarding the presence of CPT. Clinical records were analyzed to determine baseline characteristics, success rate and complications. Monitoring was performed with a 7-day event loop recorder at 3, 6 and 12 months and annually from the 2nd year. Success was defined by recurrence of AF (duration > 30 seconds). Kaplan Meier survival curves were used to estimate the risk of events and the groups were compared using Chi-square and Mann-Whitney analysis.
Results: A total of 232 pts (60 ± 12 years, 68% males) underwent CB. 29 pts had CPT (28 - common left pulmonary trunk and 2 - common right pulmonary trunk). Baseline characteristics were similar between groups, except for CHA_2DS_2VASc score and prior cerebrovascular disease history which were higher in CPT pts (3 ± 2 vs 2 ± 2, p = 0.001; 24.1% vs 6.8%, p = 0.007, respectively). The mean baseline CHA_2DS_2VASc was 2 ± 2 and the median post-CB follow-up was 135 (IQ 32-249) days. Both the 1 and 3 year arrhythmic reccurrence after AF ablation was not significantly different when comparing CPT and non CPT group with a 3 year success rate of 95.8% in pts with CPV against 86.5% in pts without CPT (p = 0.299). There was no difference between groups (p = 0.296; p = 0.164, respectively) regarding the time of the procedure, radiation dose and rate of complications.

	CPV group	No CPV group	p
1 year Success rate	1 (4.4%)	21 (11.9%)	0.299
3 year Success rate	1 (4.4%)	21 (11.9%)	0.39
Time of procedure	91.6 ± 23.3min	100.7 ± 35.9min	0.296
Radiation dose	13.7 ± 6.7 Gy	15.8 ± 8.2 Gy	0,164
Rate of complications	2 (6.8%)	10 (4.9%)	0.636

Conclusions: In our experience, balloon cryoablation for PVI is a safe and successful procedure in patients with CPT anatomical variation.

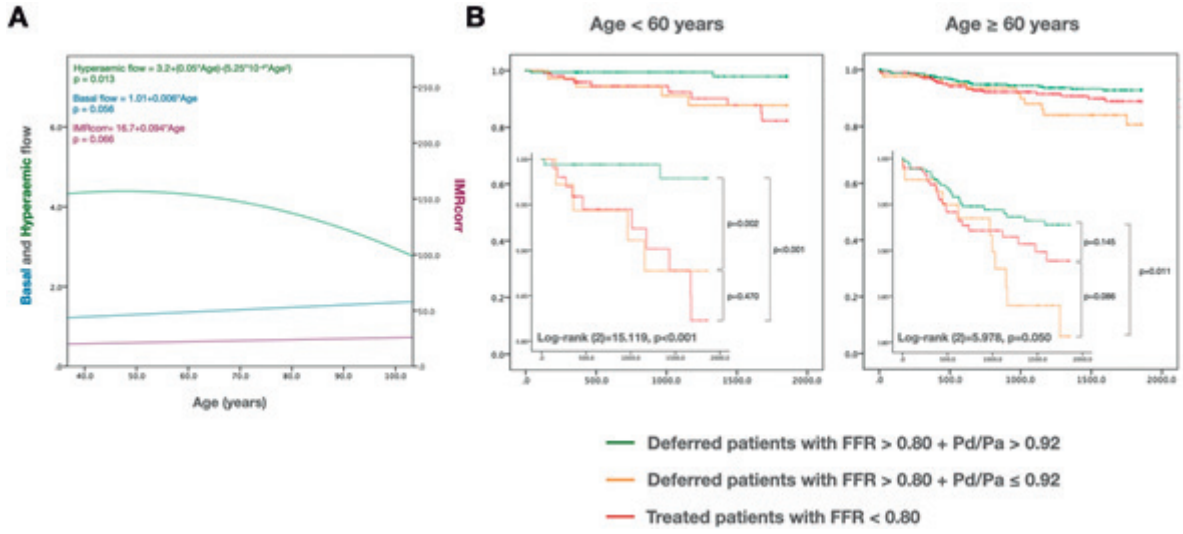
Sábado, 01 Maio de 2021 | 10H30-11H30

Sala Virtual 3 | CO 14 - Doença coronária

CO 74. PHYSIOLOGICAL CHANGES ASSOCIATED TO AGEING IN THE CORONARY CIRCULATION AND ITS RELEVANCE FOR HYPERAEMIC AND NON-HYPERAEMIC INDICES OF STENOSIS RELEVANCE

Daniel Candeias Faria

Hospital Prof. Doutor Fernando Fonseca.



CO 74 Figure

Introduction: The clinical impact of age-dependent coronary physiology changes regarding FFR, resting Pd/Pa and microcirculatory function in patients with coronary artery disease remains unclear.
Objectives: We aimed to investigate the modifications in coronary physiology associated to ageing, paying attention to its impact on hyperemic and non-hyperaemic indices of stenosis relevance.
Methods: We performed a pooled patient-level analysis of three prospective international studies, including 1,134 patients (1,328 vessels) with coronary stenoses interrogated with pressure and flow (thermodilution) guidewires. The age dependent correlations of hyperemic- and non-hyperemic translesional pressure ratio (fractional flow reserve [FFR] and Pd/Pa, respectively) and microcirculation function indices (coronary flow reserve [CFR] and microcirculatory resistance [IMR]) were calculated. Patients were stratified into age related groups, and the respective prevalences of FFR and basal Pd/Pa concordance and discordance were calculated and compared. Patient evolution over a 5 year period was assessed in different age groups, paying attention to vessel oriented patient ocutomes [VOCO], comprised of cardiac death, target vessel related myocardial infarction and target vessel revascularization.
Results: Age correlated positively with FFR (r = 0.08, 95%CI: 0.03 to 0.13, p = 0.005), but not with Pd/Pa (r = -0.03, 95%CI:-0.09 to 0.02, p = 0.242). CFR correlated negatively with age (r = -0.15, 95%CI: -0.21 to -0.10, p < 0.001) due to a significant decrease in maximal hyperaemic flow in older patients, without a significant increase in baseline flow or resistance - Figure A. Older patients with FFR-guided deferred-PCI with abnormal resting Pd/Pa (≤ 0.92) had significantly more VOCO (HR 2.10, 95%CI: 1.15 to 4.36, p = 0.048) - Figure B. This finding was in line with the impact of microvascular dysfunction as assessed by CFR ≤ 2.00 (HR 2.46, 95%CI: 1.23 to 4.96, p = 0.011).
Conclusions: Ageing is associated with marked decrease in microcirculatory function, as assessed with CFR and other indices. In older patients in whom PCI is deferred on the grounds of FFR values, both CFR and Pd/Pa have an incremental value in predicting future VOCO.

CO 75. STENT-SAVE A LIFE INTERNATIONAL SURVEY ON THE PRACTICE OF PRIMARY CORONARY ANGIOPLASTY DURING THE COVID-19 PANDEMIC

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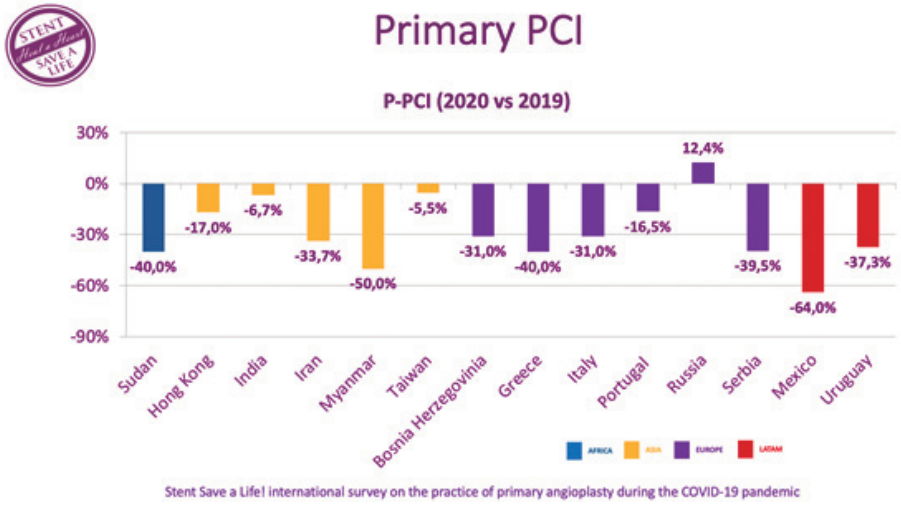
[1]Hospital Garcia de Orta, EPE. [2]Geschaeftsfuehrer - Amtsgericht Essen. [3]Stent Save a Life . [4]Medical University of Graz. [5]Amsterdam UMC, University of Amsterdam, Heart Center. [6]Stent Save a Life-Global.

Objectives: To evaluate the impact of the COVID-19 pandemic on patient admissions with acute coronary syndromes (ACS) and primary coronary angioplasty (PPCI) in countries participating in the Stent-Save a Life (SSL) global initiative.
Methods and results: We conducted a multicenter, observational survey to collect data on patient admissions for ACS, STEMI and PPCI in the SSL participating countries throughout a period during the COVID-19 outbreak



CO 75 Figure

(March and April 2020) compared with the equivalent period in 2019. From the 32 member countries of the SSL global initiative, 17 accepted to participate in the survey (3 from Africa, 5 from Asia, 6 from Europe and 3 from Latin America (LATAM)). We observed a global reduction of 27.5% and 20.0% in admissions with ACS and STEMI respectively. The decrease in PPCI was 26.7% (Figure). This trend was observed in all countries except for two. In these two countries, the pandemic peaked later than in the other countries.
Conclusions: This survey shows that the COVID-19 outbreak was associated with a significant reduction of hospital admissions for ACS and STEMI as well as a reduction of PPCI, which can be explained by both patient and system-related factors.

CO 77. FEASIBILITY OF VIRTUAL FRACTIONAL FLOW RESERVE DERIVED FROM CORONARY ANGIOGRAPHY AND ITS CORRELATION WITH INVASIVE FUNCTIONAL ASSESSMENT

Tânia Mano, Vera Ferreira, Rúben Ramos, Eunice Oliveira, Ana Santana, João Melo, Cristina Fundinho, André Grazina, Sofia Jacinto, Rita Teixeira, Duarte Cacela, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Invasive functional assessment (iFA) of coronary artery disease (CAD) needs expensive devices, has potential procedure-related complications and is still underutilized. Virtual Fractional Flow Reserve (vFFR) derived from invasive coronary angiography (ICA) has the potential to overcome these limitations. We aim to investigate the feasibility of vFFR analysis and its correlation with iFA (iFR, RFR or FFR).
Methods: Retrospective analysis of consecutive patients (pts) who underwent iFA in a tertiary center between 2019 and 2020. vFFR was calculated using a dedicated software (CAAS Workstation 8.4) based on standard non-hyperaemic coronary angiograms acquired in ≥ 2 different projections, by operators blinded to iFA results. Diagnostic performance and accuracy of vFFR were evaluated. vFFR was considered positive when < 0.80. FFR < 0.8 and iFR/RFR < 0.90 were classified as positive according to current clinical standards.
Results: Out of 113 coronary arteries of 102 pts, vFFR was successfully analysed in 106 (94%). Reasons for vFFR analysis failure were: vessel projection overlap (48%), < 2 angiographic projections (28%) and table movement while acquisition (24%). From 106 coronary arteries of 95 pts with analysable vFFR (78% male, mean age 67.8 ± 9.7 years), 90 (85%) showed agreement with the respective iFA result. The vFFR predicted which lesions were physiologically significant and which were not with accuracy, sensitivity, specificity, positive and negative predictive values of 73%, 73%, 83%, 53%, and 92% respectively. The mean difference between vFFR and iFA were -0.0484 ± 0.096 and Pearson's correlation coefficient was 0.533 (p < 0.001). The ROC area under the curve was 0.839 (0.751-0.928, p < 0.001).
Conclusions: FFR were feasible in 94% of cases analysed retrospectively. As compared to gold-standard iFA, vFFR had an overall moderate accuracy in detecting ischemia-producing lesions and a negative predictive value > 90%. vFFR has the potential to substantially simplify physiological coronary lesion assessment and thus improve its current uptake.

CO 78. IMPACT OF COVID 19 PANDEMIC IN ACUTE CORONARY SYNDROME ADMISSIONS AND MANAGEMENT

Bruno Miranda Castilho, Ana Rita Veiga, Ana Rita Moura, Mariana Saraiva, Nuno Craveiro, Ana Filipa Damásio, Kevin Domingues, Vítor Martins

Hospital Distrital de Santarém, EPE.

Introduction: COVID-19 has been declared a pandemic on 11 March 2020 and it is placing an enormous burden on the Portuguese healthcare system. Recent international studies suggest that this epidemic had a vast deleterious effect on the management of acute coronary syndromes (ACS) resulting in significant reduction of ACS admissions and an increase in complication rates and mortality. The aim of this study is to investigate the impact of the pandemic on the number of admissions, management and outcomes of ACS.

Table1. Characteristics of ACS admissions during COVID 19 pandemic *versus* 2019

Variable	Total Population n.º (%) n= 227 (100%)	March to December 2019 n.º(%) n= 143 (63%)	March to December 2020 n.º(%) n=84 (37%)	p value
Demographic				
Mean Age (years) ±SD	67.8±12.7	69.3±12.2	65.1±13.1	**0.02**
Male (%)	163 (71.8%)	100 (70%)	63 (75%)	0.25
Acute Coronary Syndromes				
Total ACS	227	143	84	
STEMI (%)	78 (34.4%)	49 (34.2%)	29 (34.5%)	0.54
Time to ECG since admission to the ED (minutes)*	23.3±15.4	19.4±10.7	26.7 ± 18.9	**0.02**
LVEF <50% at admission (%)*	108 (48.6%)	71 (50.7%)	37 (45.1%)	0.49
Killip class > 1 (%)	25 (11%)	15 (10.5%)	10 (11.8%)	0,451
Complications during the admission (Sustained ventricular tachycardia, inotropic therapy; mechanical ventilation; cardiac arrest) (%)	37(16.3%)	22 (15.4%)	15 (17.9%)	0,39
Mortality (%)	10 (4.4%)	7 (4.9%)	3 (3.6%)	0,28

*missing values

CO 78 Figure

Methods: Retrospective analysis of patients admitted due to ACS between 1 March and 31 December of 2019 and in the same period of 2020 (COVID 19 pandemic), in a district hospital. The two groups were compared according to the number of admissions, type of ACS, time from admission to first ECG in patients presenting to the emergency department (ED) with chest pain, Killip class and LVEF (left ventricular ejection fraction) on admission, complications during the admission (sustained ventricular tachycardia, cardiac arrest, need of inotropic therapy and mechanical ventilation) and mortality.
Results: A total of 227 patients were included, predominantly men (71.8%) and with a mean age of 67.8 ± 12.7 years. During the period of 2020 there was a significant decrease (41%) in the number of admissions due to ACS (84 versus 143 in 2019). The proportion of ST elevation myocardial infarction (STEMI) was similar (34.2% in 2019 versus 34.5% in 2020, p = 0.54). Time to ECG since admission to the ED, in patients presenting with chest pain, was significantly higher in 2020 (26.7 ± 18.9 versus 19.4 ± 10.7 minutes, p = 0.02). The proportion of reduced LVEF (< 50%) on admission was slightly (but not significantly) lower in the 2020 group (45.1% vs 50.7%, p = 0.49). The probability of evolution in Killip > 1 was similar on both groups (11.8% vs 10.5%, p = 0.45), such as the rate of complications (sustained ventricular tachycardia, inotropic therapy; mechanical ventilation; cardiac arrest), (17.9 % in 2020 vs 15.4% in 2019, p = 0.39). In-hospital mortality was slightly lower in 2020, without statistical significance (3.6 vs 4.9%, p = 0.28).
Conclusions: Our results are in trend with international studies that suggest a significant decrease in ACS admissions during the COVID 19 pandemic and a more problematic management of these patients (particularly in the ED), in this case reflected by the significantly increased time to first ECG in the period of 2020. However, the rate of complications, Killip class, LVEF at admission and mortality rates were not significantly different, suggesting that patients did not present with more severe disease and that, despite the challenges associated with the pandemic, hospitals managed to provide adequate patient care. Studies of out-of-hospital mortality are needed to clarify the impact of ACS mortality in this setting.

CO 76. IMPELLA FOR CARDIOGENIC SHOCK AND HIGH-RISK PERCUTANEOUS CORONARY INTERVENTION: A SINGLE-CENTER EXPERIENCE

Mariana S. Brandão, Pedro Gonçalves Teixeira, Pedro Ribeiro Queirós, Mariana Ribeiro Silva, Gualter Santos Silva, Diogo Santos Ferreira, João Gonçalves Almeida, Gustavo Pires-Morais, Marisa Passos Silva, Marta Ponte, Adelaide Dias, Alberto Rodrigues, Pedro Braga, Daniel Caeiro, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: The Impella is a percutaneous ventricular assist device that unloads the left ventricle by ejecting blood to the aorta. Its use in cases of cardiogenic shock (CS) and high-risk percutaneous coronary intervention (HR-PCI) is increasing.
Objectives: To report clinical outcomes with the Impella device in the settings of CS and HR-PCI.
Methods: Single-center retrospective study including consecutive patients (2007-2019) implanted with Impella for CS treatment or hemodynamic support of HR-PCI.
Results: 22 patients were included: 12 were treated for CS and 10 underwent Impella-supported PCI. Impella 2.5 (7) and Impella CP (15) were used. In the CS group (75.9% male, mean age 50.4 ± 18.9, median duration of support 19 ± 24 hours), CS etiologies were myocardial infarction (41.7%), acute myocarditis (25.0%) and acute decompensated heart failure (33.3%). All patients presented with multiorgan dysfunction and were in stage D or E of the SCAI classification of CS. Most patients (83.3%) had severe left ventricular (LV) dysfunction and half also had right ventricular impairment. In 5 cases, combined support of Impella and venoarterial extracorporeal membrane oxygenation (ECMO) was used: in 2 patients, Impella was implanted for LV venting; 3 patients needed escalation to ECMO due to refractory CS. Hemolysis was the most frequent device-related complication (63.7%). Three patients had BARC type 3 vascular complications. Three patients were transferred to a transplantation center, but none survived to transplant. In-hospital, cumulative 30-day and 1-year mortality were 58.3%, 66.6% and 83.3%, respectively. In the HR-PCI group (all male, mean age 73.7 ± 9.1 years, 50% diabetic, mean left ventricular ejection fraction 39.4 ± 13.6) all patients had multivessel, highly complex, disease (mean baseline SYNTAX I score 44.1 ± 13.7); six had a last remaining conduit. All patients were considered ineligible for surgery by the Heart Team. Half of the patients underwent PCI in the setting of an acute coronary syndrome. Median number of vessels treated was 2 ± 1. Seven patients underwent unprotected left main PCI. Impella was immediately explanted after PCI in all cases. There were no intraprocedural or device-related deaths. In-hospital and 30-day mortality were 10%; 1-year cumulative mortality was 30% (all deaths were of cardiovascular causes).
Conclusions: In the CS group, in-hospital and 30-day outcomes were poor, in line with the existing evidence, illustrating the severity, complexity and heterogeneity of this clinical scenario. Acceptable rates of major device-related complications were observed. In the HR-PCI cohort, the use of Impella to provide hemodynamic support was feasible and safe. Long-term results express the severity of the underlying disease and the patients' complexity. With the expanding use of the device, tools to identify the most suitable candidates for Impella support are warranted.

Domingo, 02 Maio de 2021 | 09H00-10H15

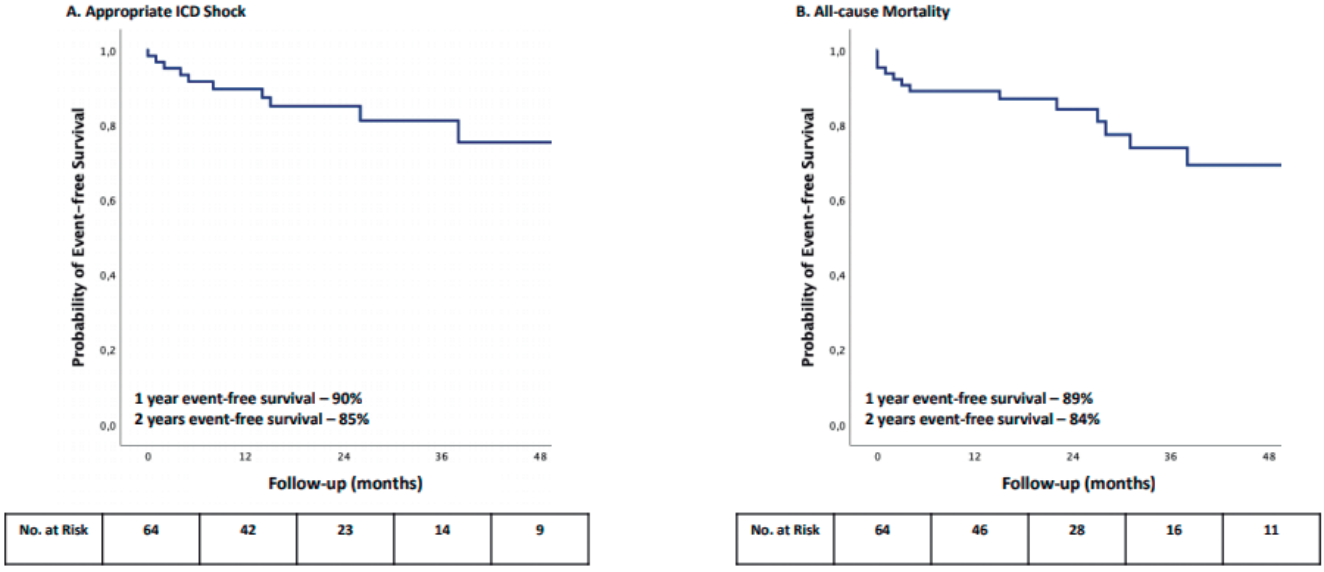
Sala Virtual 2 | CO 16 - Morte Súbita

CO 83. LONG-TERM OUTCOME OF VENTRICULAR TACHYCARDIA CATHETER ABLATION IN ISCHEMIC HEART DISEASE PATIENTS USING A HIGH-DENSITY MAPPING SUBSTRATE-BASED APPROACH: A PROSPECTIVE COHORT STUDY

Tiago Graça Rodrigues[1], Gustavo Lima da Silva[2], Afonso Nunes-Ferreira[2], Nelson Cunha[2], Pedro Silvério António[2], Sara Pereira[2], Joana Brito[2], Pedro Alves da Silva[2], Beatriz Valente Silva[2], Ana Bernardes[2], Luís Carpinteiro[2], Nuno Cortez-Dias[2], Fausto J. Pinto[2], João de Sousa[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction and objectives: Radiofrequency catheter ablation (RCA) for ventricular tachycardia (VT) in patients with ischemic heart disease (IHD) is associated with a reduced risk of VT storm and implantable cardioverter defibrillator (ICD) shocks.
Objectives: to report the long-term outcome after a single RCA procedure for VT in patients with IHD using a high-density substrate-based approach.
Methods: We conducted a prospective, observational, single-centre and single-arm study involving patients with IHD, referred for RCA procedure for VT using high-density mapping catheters. Substrate mapping was performed in all patients. Procedural endpoints were VT noninducibility and local abnormal ventricular activities (LAVAs) elimination. The primary end point was survival free from appropriate ICD shocks and secondary end points included VT storm and all-cause mortality.
Results: Sixty-four consecutive patients were included (68 ± 9 years, 95% male, mean ejection fraction 33 ± 11% , 39% VT storms, and 69% appropriate ICD shocks). LAVAs were identified in all patients and VT inducibility was found in 83%. LAVAs elimination and noninducibility were achieved in 93.8% and 60%, respectively. After a mean follow-up of 25 ± 18 months, 90% and 85% of patients are free from appropriate ICD shocks at 1 and 2 years, respectively. The proportion of patients experiencing VT storm decreased from 39% to 1.6%. Overall survival was 89% and 84% at 1 and 2 years, respectively.
Conclusions: RCA of VT in IHD using a high-density mapping substrate-based approach resulted in a long-term steady freedom of ICD shocks and VT storm.



CO 83 Figure

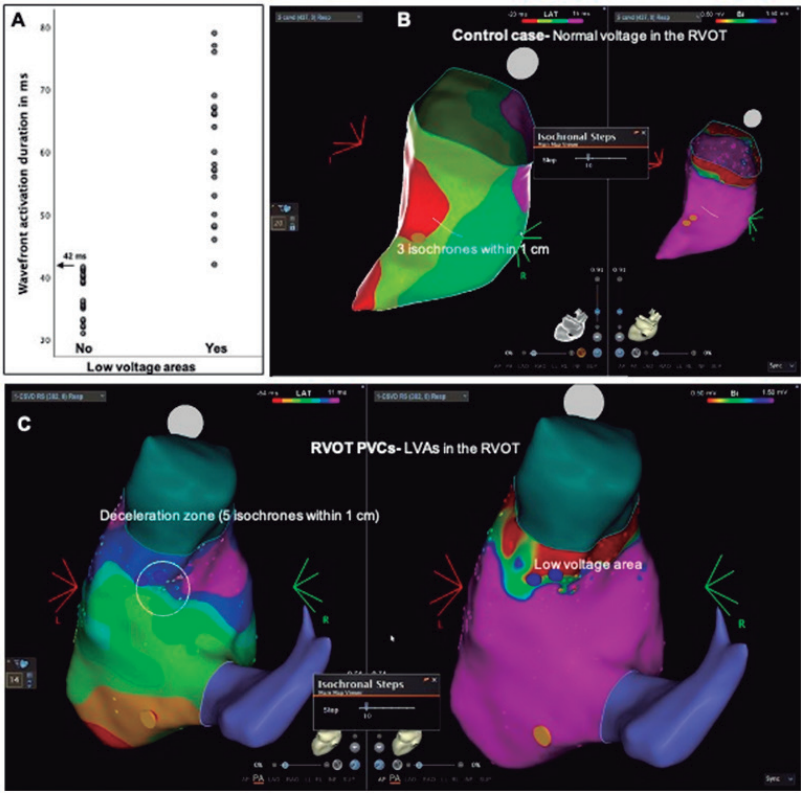
CO 80. ASSESSMENT OF WAVEFRONT PROPAGATION SPEED ON THE RIGHT VENTRICULAR OUTFLOW TRACT: DECELERATION ZONES ASSOCIATED WITH THE PRESENCE OF LOW VOLTAGE AREAS

Leonor Parreira[1], Pedro Carmo[2], Dinis Mesquita[1], Rita Marinheiro[1], Alexandra Gonçalves[1], Catalin Marinescu[2], Lia Marques[1], José Farinha[1], Ana Esteves[1], Pedro Amador[1], Artur Lopes[1], Marta Fonseca[1], Diogo Cavaco[2], Pedro Galvão Santos[2], Pedro Adragao[2]

[1]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [2]Hospital da Luz Lisboa.

Introduction and objectives: Activation wavefront is rapid and uniform in normal myocardium. Fibrosis is associated with deceleration zones (DZ) and late activated zones. The presence of low voltage areas (LVAs) in the right ventricular outflow tract (RVOT) of patients with premature ventricular contractions (PVCs) from this origin has been described previously. The aim of this study was to evaluate in sinus rhythm, the RVOT endocardial activation duration (EAD) and the presence of DZs, in patients with PVCs and in controls.

Methods: Consecutive patients with frequent (> 10,000/24h) idiopathic PVCs with inferior axis subjected to 3D electroanatomical mapping and ablation and had an activation and voltage map of the RVOT performed in sinus



CO 80 Figure

rhythm. A control group of patients without PVCs that underwent ablation of supraventricular arrhythmias was also studied. Patients with structural heart disease, previous ablation or conduction disease were excluded. The RVOT EAD was measured as the time interval between the earliest and the latest activated region. Also evaluated the number of 10 ms isochrones throughout the RVOT and the maximal number of 10 ms isochrones within 1 cm, and a DZ was defined as a zone with>3 isochrones within 1 cm radius. Low voltage areas (LVA) were defined as areas with local electrogram amplitude < 1.5 mV.

Results: We studied 42 patients, 29 in the PVC group and 13 control subjects. The two groups did not differ in relation to age, gender and number of points in the map. The site of origin of the PVCs was the RVOT in 23 patients and the LVOT in 6. EAD and number of 10 ms isochrones in the RVOT were significantly higher in the PVC group, respectively 56 (41-66) ms vs 39 (35-41) ms, p = 0.001 and 5 (4-6) vs 4 (4-4), p = 0.037. Presence of LVAs and DZs were more frequent in the PVC group, respectively 21 (72%) vs 0 (0%), p < 0.0001 and 20 (69%) vs 0 (0%), p < 0.0001. LVAs were more frequent in PVCs from the RVOT than from the LVOT (83% vs 33%, p = 0.033). Patients with LVA had longer EAD 60 (52-67) vs 36 (34-40) ms, p < 0.0001 (Figure A) and more DZ than patients without LVA 95% vs 0%, p < 0.0001 (Figure B and C).

Conclusions: The velocity of the wavefront propagation was slower and DZs were more frequently present in patients with PVCs and were associated with the presence of LVAs.

CO 82. LONG QT SYNDROME-EXPERIENCE FROM A PORTUGUESE CENTER

Mafalda Carrington[1], Tiago Rodrigues[2], Pedro Silvério António[2], Afonso Nunes-Ferreira[2], Rita Rocha[1], Nelson Cunha[2], Sara Couto Pereira[2], Pedro Morais[2], Luís Carpinteiro[2], Nuno Cortez-Dias[2], FaustoJ. Pinto[2], João de Sousa[2]

[1]Hospital do Espirito Santo, EPE, Évora. [2]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Congenital long QT syndrome (LQTS) is a hereditary disease characterized by prolonged QTc interval and risk of ventricular tachycardia (VT), which may lead to syncope, cardiac arrest, or sudden cardiac death (SCD) in young people.

Objectives: To report the experience and the incidence of significant arrythmias in patients with congenital LQTS in an inherited primary arrhythmic syndrome center from a Portuguese tertiary hospital.

Methods: Consecutive patients with LQTS were prospectively recruited from 1997 to 2021. Clinical data and 12-lead ECG were registered. Genetic screening was performed using DNA targeted sequencing for a panel which included KCNQ1 (LQTS 1), KCNH2 (LQTS 2), SCN5A (LQTS 3) and KCNE1 (LQTS 5). During follow-up, we registered significant clinical events such as SCD, as well as symptomatic and asymptomatic arrhythmic events.

Results: We enrolled a total of 15 patients affected by LQTS, among which there were 9 (67%) index-cases, 9 (60%) were females and the mean age at diagnosis was 44 ± 16 years-old. In this cohort, we only found an associated congenital abnormality in 1 patient who had Andersen-Tawil syndrome (ATS) with periodic paralysis. The Schwartz score indicated high probability of clinical diagnosis (≥ 3.5) in 12 patients, intermediate probability in 1 (1.5-3) and low probability in 2 (≤ 1). Regarding ECG abnormalities, 11 (73%) patients had a QT≥ 480 milliseconds, and only 3 had notched T wave in 3 leads at diagnosis. Nine (60%) patients were symptomatic at diagnosis, among whom 7 (47) had a history of previous syncope (only 2 with stress) and 5 (33%) presented with torsade de pointes and/or aborted SCD. A family history of unexplained SCD below 30 years-old and/or definite LQTS was found in 9 (60%) of them. Genetic screening was performed in 14 (93%), of whom 11 (79%) had a disease-causing mutation in KCNH2 and the patient with ATS had a mutation in KCNJ2 (LQTS 7). In the remaining 2 patients we found no mutations in the 4 sequenced genes. During a median follow-up of 4 [3.5-12.7] years, all patients had a beta-blocker prescribed and 6 (40%) received an implantable cardiac defibrillator (ICD), 2 due to aborted SCD at diagnosis and the other 4 for syncope recurrence, documented VT and/or QTc>500ms despite beta-blocker therapy. During follow-up, arrhythmic events were present in 6 (40%) patients (Table), including one SCD. The incidence rate of significant arrhythmic events was 0.06%/year.

Conclusions: The KCNH2 was the most prevalent mutation in this Portuguese cohort. Care of congenital LQTS patients in an inherited primary arrhythmic syndrome center was associated with a low incidence of significant clinical events (0.06%/year).

Type of LQTS (mutated gene)	Schwarz score for clinical diagnosis	Torsade de pointes/aborted SCD at diagnosis	Follow-up (in years)	Events during follow-up	ICD implantation
LQT2 (KCNH2)	3.5	No	3.9	No	No
LQT2 (KCNH2)	7	Yes	7.2	No	Yes
LQT2 (KCNH2)	4	No	21.1	Unexplained syncope	Yes
LQT2 (KCNH2)	4	No	18.0	No	No
LQT2 (KCNH2)	4.5	No	3.7	No	No
LQT2 (KCNH2)	1	No	3.5	No	Yes
LQT2 (KCNH2)	5.5	No	4.0	No	No
LQT2 (KCNH2)	4.5	No	12.7	Sudden cardiac death	No
LQT2 (KCNH2)	1.5	No	1.7	No	No
LQT2 (KCNH2)	5.5	No	3.4	Unexplained syncope + documented NSVT	Yes
LQT2 (KCNH2)	8.5	Yes	11.2	Appropriate ICD therapies	Yes
LQTS7 (KCNJ2)	0	No	3.0	Documented NSVT	Programmed
No mutations found	5	Yes (with a metabolic and iatrogenic component)	4.0	No	No
No mutations found	6	Yes	6.0	Appropriate ICD therapies	Yes
No genetic screening performed	7	Yes (initial diagnosis in 1997)	23.2	No	No

CO 82 Figure

CO 81. CATHETER ABLATION SUPPORTED BY EXTRACORPOREAL MEMBRANE OXYGENATION - LAST RESORT TREATMENT OF ARRHYTHMIC STORM?

Catarina Costa, Ana Filipa Amador, João Calvão, Gonçalo Pestana, Ana Lebreiro, Ricardo Pinto, Tânia Proença, Miguel Carvalho, Teresa Pinho, Ana Rita Ferreira, Roberto Roncon-Albuquerque, Luís Adão, Filipe Macedo

Centro Hospitalar de S. João, EPE.

Introduction: Arrhythmic storm (AS) is associated with high mortality, even with best medical care and hemodynamic support. If medical therapeutic failure, electrophysiological mapping and ablation are potential lifesaving therapies. Venoarterial extracorporeal membrane oxygenation (VA-ECMO) provides temporary mechanical circulatory support, and can be used as a salvage intervention in patients with cardiogenic shock. Considering the seriousness of AS and the technical complexity involved, catheter ablation supported by VA-ECMO is infrequently performed. We sought to assess the safety and effectiveness of emergent catheter ablation procedures performed in patients on VA-ECMO at our hospital.
Methods: Retrospective study of all VT catheter ablation procedures performed with VA-ECMO support at a tertiary centre between 2016 and 2020. Follow-up data was obtained from review of electronical records.
Results: Five patients underwent 6 emergent VT ablation procedures due to AS. The median age was 62 years (range, 52) and 4 patients were men. Three patients had VT at admission, while 2 were admitted with an acute coronary syndrome and developed VT during the hospitalization. Four patients had ischemic heart disease, though only 1 had previous history of VT; the remaining patient presented no structural heart disease. Median left ventricle ejection fraction was 11% (range 30). All patients had incomplete response to amiodarone, lidocaine and overdrive pacing, before being proposed to catheter ablation. Four patients were on ECMO support before ablation, while 1 was cannulated during the procedure due to hemodynamic instability. Ablation was performed using a retrograde approach in 3 patients, and combined retrograde and transeptal access in 2; one patient had epicardial ablation after unsuccessful endovascular approach. Three patients had left ventricle substrate ablation and the remaining 2 of the right ventricle. No major complications were seen directly related to the procedures. The median length of stay in intensive care unit was 22 days (range 41 days). Weaning of VA-ECMO was accomplished in all patients. Two patient died during the same hospitalization (one due to uncontrolled arrhythmic events). At a median 23 months (range 31) of follow-up of the surviving patients, two had recurrence of VT but no one had return of AS.
Conclusions: In our sample VT ablation on VA-ECMO support was a safe procedure, with no immediate complications. However, as reported in the literature, a high mortality rate was observed both in-hospital and during follow-up, mostly related to advanced structural heart disease. Also, considerable VT recurrence rates were seen, but with no re-hospitalization. Our experience shows that catheter ablation is a life-saving procedure in otherwise uncontrollable AS, and allowed absolute success in weaning VA-ECMO.

CO 79. LONG TERM PROGNOSIS OF OUT-OF-HOSPITAL CARDIAC ARREST DUE TO IDIOPATHIC VENTRICULAR FIBRILLATION -A TERTIARY CENTER EXPERIENCE

Ricardo Alves Pinto, Tânia Proença[2], Miguel Martins Carvalho[2], Pedro Diogo Grilo[2], Carlos Xavier Resende[2], Sofia Torres[2], João Calvão[2], Ana Filipa Amador[2], Catarina Costa[2], Sílvia Oliveira[2], Gonçalo Pestana[2], Raquel Mota Garcia[2], Ana Lebreiro[2], Luís Adão[2], Filipe Macedo[2]

Centro Hospitalar de S. João, EPE. [2]Centro Hospitalar Universitário de São João.

Introduction: Sudden cardiac death (SCD) is an uncommon event in the absence of structural heart disease. However, ventricular fibrillation (VF) may occur in patients with unknown cardiac disease and a comprehensive work-up is needed to further improve diagnostic. Still, a significant and heterogenous group of patients remains labelled of Idiopathic VF and limited data is available regarding their natural history.
Objectives: The aim of this study was to evaluate the clinical outcomes of survivors of an aborted SCD due to idiopathic VF or pulseless ventricular tachycardia (pVT).
Methods: Patients who survived an idiopathic VF or pVT referred to a cardiac defibrillator (ICD) implantation at a tertiary center between 2005 and 2019 were included. Patients were followed for 1 to 15 years (median follow-up of 7 years). Clinical and device data were collected.
Results: A population of 29 patients, 59% male, with a median age of 50 years (age ranging from 18 to 76) at the time of the aborted SCD was studied. All patients implanted an ICD (69% single chamber, 24% dual chamber and 3% subcutaneous) at the index hospitalization. The initial rhythm was VF in 76% and pVT in 24%. In relation to the context of the arrhythmic event, 48.3% occurred during daily life activities, 13.8% after an emotional stress, 6.9% during efforts and a similar percentage occurred either in rest or asleep. Of note, 12.5% of patients had previous history of syncope and 12% had family history of SCD. Normal ECG was present in 83% of patients. As for the cardiovascular risk factors, 61.5% had hypertension, 19% dyslipidemia, 17% diabetes, 31% were smokers or previous smokers. Atrial fibrillation was present in 15% of patients. To exclude possible causes of VF, all patients were submitted to coronary angiogram and echocardiogram, 64% to genetic testing, 68% to cardiac magnetic resonance, 20% to electrophysiologic study, 12% to pharmacological provocative test and 4% were submitted to endomyocardial biopsy. At follow-up, an etiological diagnosis was established in 31% of patients: 3 events were attributed to coronary vasospasm, 3 to short coupled polymorphic VT, 1 patient had long QT syndrome, 1 had Brugada syndrome and in 1 patient an ANK2 mutation was identified. As for the clinical outcomes, 8% patients died (from non-arrhythmic causes), 31% patients received appropriate therapies and 19% had unappropriated shocks (of those 60% for sinus tachycardia and 40% for supraventricular tachycardia).
Conclusions: Etiologic diagnosis and prediction of recurrence of arrhythmic events in patients with idiopathic VF is challenging, even with a long-term follow-up and more sophisticated diagnostic evaluation. Idiopathic VF is a rare but serious condition with recurrence in about one third of patients. Although not free of complications, ICD remains the gold standard of treatment.

CO 84. VENTRICULAR TACHYCARDIA ABLATION IN NONISCHEMIC CARDIOMYOPATHY

Daniel Nascimento Matos, Diogo Cavaco, Pedro Carmo, Maria Salomé Carvalho, Gustavo Rodrigues, João Carmo, Pedro Galvão Santos, Francisco Costa, Miguel Mendes, Francisco Morgado, Pedro Adragão

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Catheter ablation outcomes for ventricular tachycardia (VT) in nonischemic cardiomyopathy (NICM) are suboptimal when compared to ischemic cardiomyopathy. We aimed to analyse the long-term efficacy and safety of percutaneous catheter ablation in this subset of patients.
Methods: Single-center observational retrospective registry including consecutive NICM patients who underwent catheter ablation for VT during a 10-year period. The efficacy endpoint was defined as VT-free survival after catheter ablation, while safety outcomes were defined by 30-days mortality and procedure-related complications. Independent predictors of VT recurrence were assessed by Cox regression.
Results: In a population of 68 patients, most were male (85%), mean left ventricular ejection fraction (LVEF) was 34 ± 12%, and mean age was 58 ± 15 years. All patients had an implantable cardioverter-defibrillator. Twenty-six (38%) patients underwent epicardial ablation (Table 1). Over a median follow-up of 3 years (IQR 1-8), 41% (n = 31) patients had VT recurrence and 28% died (n = 19). Multivariate survival analysis identified LVEF (HR = 0.98; 95%CI 0.92-0.99, p = 0.046) and VT storm at presentation (HR = 2.38; 95%CI 1.04-5.46, p = 0.041) as independent predictors of VT recurrence. The yearly rates of VT recurrence and overall mortality were 21%/year and 10%/year, respectively. No patients died at 30-days post-procedure, and mean hospital length of stay was 5 ± 6 days. The complication rate was 7% (n = 5, Table 1), mostly in patients undergoing epicardial ablation (4 vs 1 in endocardial ablation, p = 0.046).

Table 1: Baseline characteristics of the population

Baseline characteristics	Population (N=68)
Male sex – no. (%)	58 (85.3)
Age – mean ± SD	58 ± 15
HTN – no. (%)	39 (57.4)
Dyslipidemia – no. (%)	28 (41.2)
Diabetes mellitus type 2 – no. (%)	11 (16.2)
History of tobacco consumption – no. (%)	23 (33.8)
Atrial fibrillation – no. (%)	7 (10.2)
NYHA class III or IV – no. (%)	36 (52.9)
Chronic kidney disease – no. (%)	26 (38.3)
Beta-blocker – no. (%)	66 (97.1)
Amiodarone – no. (%)	60 (88.2)
LVEF (%) – mean ± SD	34 ± 12
RBBB-like VT morphology – no. (%)	47 (69.1)
Electrical storm at presentation – no. (%)	18 (26.5)
Epicardial ablation – no. (%)	26 (38.2)
Hospitalization duration (days) – mean ± SD	5 ± 6
Complications – no. (%)	5 (7.3)
Pericardial effusion – no. (%)	2 (2.9)
Right ventricle puncture – no. (%)	1 (1.5)
Vascular complication – no. (%)	1 (1.5)
Complete heart block – no. (%)	1 (1.5)

HTN=arterial hypertension; ICD=implantable cardioverter-defibrillator; LVEF=left ventricle ejection fraction; NYHA=New York Heart Association functional class; RBBB=right bundle brunch block; SD=standard deviation; VT=ventricular tachycardia.

Conclusions: LVEF and VT storm at presentation were independent predictors of VT recurrence in NICM patients after catheter ablation. While clinical outcomes can be improved with further technical and scientific development, a tailored endocardial/epicardial approach was safe, with low overall number of complications and no 30-days mortality.

Sexta-feira, 30 Abril de 2021 | 11H30-12H30

Sala Virtual 3 | CO 17 - Interventional Cardiology-TEP

CO 85. HYBRID THERAPEUTIC APPROACH WITH SPECIFIC DRUG THERAPY AND BALLOON PULMONARY ANGIOPLASTY IN PATIENTS WITH CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION: EFFECTS ON PULMONARY ARTERIAL COMPLIANCE

Rita Calé, Ana Rita Pereira, Filipa Ferreira, Sofia Alegria, Débora Repolho, Pedro Santos, Sílvia Vitorino, Mariana Martinho, Daniel Sebaiti, Maria José Loureiro[2], Hélder Pereira

Hospital Garcia de Orta, EPE. [2]outro.

Introduction: Pulmonary arterial compliance (C_{PA}) is a measure of arterial distensibility and is directly related with right ventricular (RV) systolic overload and prognosis in pulmonary hypertension. The effects on C_{PA} of a hybrid therapeutic approach with pulmonary vasodilators and balloon pulmonary angioplasty (BPA) in patients (pts) with chronic thromboembolic pulmonary hypertension (CTEPH) remain unclear.
Objectives: To determine the effect on C_{PA} of a hybrid therapeutic approach with pulmonary vasodilators and BPA in CTEPH pts.
Methods: Prospective single-centre study that included all BPA sessions performed in CTEPH pts from 2017 to 2020. Right heart catheterization was performed at baseline before the start of pulmonary vasodilator therapy (N = 13), just before the first BPA session (N = 13) and at 6-months of follow-up (FUP) after the last BPA session (N = 10, as 3 pts did not complete the 6-months FUP). C_{PA} was calculated as stroke volume/pulmonary arterial pulse pressure [systolic pulmonary artery pressure (PAP)-diastolic PAP], normal values 3.8-12 ml/mmHg, poor prognostic values < 2.5 ml/mmHg as previously described (Ann Am Thorac Soc. 2016;13(2):276-84; Circulation. 2017;136:314-26).
Results: 69 BPA sessions were performed in 13 CTEPH pts: mean age 62.4 ± 14.9 years; 67% with inoperable disease. At baseline, mean value of C_{PA} was severely decreased (1.4 ± 0.8 ml/mmHg). Eleven pts (84.6%) were treated with specific vasodilator therapy (guanylate cyclase stimulators in 9; endothelin receptor antagonists in 6; phosphodiesterase type 5 inhibitors in 2, prostacyclin analogues in 3 and selexipag in 1). The number of pulmonary vasodilators decreased from 1.4 ± 1.0 before BPA to 1.2 ± 0.7 at FUP (p = 0.082). Mean number of BPA sessions was 5.3 ± 1.8 per pt (min 2-max 8) and mean number of total vascular segments treated 9.9 ± 2.3 per pt (min 6-max 15). BPA alone was associated with a significant reduction of diastolic PAP (23.8 ± 7.6 versus 15.5 ± 6.0 mmHg, p = 0.039) and a tendency to reduction of mean pulmonary vascular resistance (PVR of 5.3 ± 3.1 versus 3.0 ± 1.4, p = 0.056), but did not significantly increase C_{PA} (2.4 ± 1.1 versus 2.7 ± 1.0 ml/mmHg, p = 0.564). However, a BPA strategy on top of pulmonary vasodilator therapy further improved mean PAP (45.1 ± 11.4 versus 25.1 ± 6.6 mmHg, p = 0.002), PVR (10.2 ± 4.5 versus 3.0 ± 1.4 mmHg, p = 0.001) and C_{PA} (1.4 ± 0.8 versus 2.7 ± 1.0 ml/mmHg, p = 0.004) to values near normal at 6 months of follow-up (Table). An inversely significant correlation was found between decrease in PVR an increase in C_{PA} (r = -0.82, p = 0.004) leading to reduce in RV systolic overload.
Conclusions: BPA on top of pulmonary vasodilator therapy improves haemodynamic, including C_{PA}, having an overall and consistent significant benefit. These data also suggest that the hybrid therapeutic approach decreases RV systolic afterload in pts with inoperable CTEPH or residual/recurrent PH after surgery.

CO 86. INTRACARDIAC ECHOCARDIOGRAPHY-GUIDED LEFT ATRIAL APPENDAGE OCCLUSION: DESCRIPTIVE ANALYSIS

André Grazina, António Fiarresga, Ruben Ramos, Lídia de Sousa, Duarte Cacela, Luís Bernardes, José Viegas, Luísa Moura Branco, Ana Galrinho, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Table. Changes of hemodynamic data before and after vasodilator therapy and BPA

Variables	Baseline (Before drug therapy)	BPA (Before 1st session and after drug therapy)	Follow-up (6-months after last BPA session)	p-value (Paired t test)		
				Baseline vs BPA (N=13)	BPA vs Follow-up (N=10)	Baseline vs Follow-up (N=10)
Mean PAP (mmHg)	45.1±11.4	35.8±12.2	25.1±6.6	<0.001	0.063	0.002
Systolic PAP (mmHg)	74.4±21.4	56.2±19.0	42.1±14.4	0.001	0.117	0.003
Diastolic PAP (mmHg)	27.0±9.0	23.8±7.6	15.5±6.0	0.069	0.039	0.025
Right atrial pressure (mmHg)	7.5±4.5	6.4±3.6	6.4±2.8	0.268	0.264	0.941
Cardiac Index (L/min/m2)	2.4±0.6	2.8±0.6	2.9±1.0	0.052	0.776	0.169
PVR (wood unit)	10.2±4.5	5.3±3.1	3.0±1.4	<0.001	0.056	0.001
Pulmonary pulse pressure (mmHg)	47.4±17.2	32.5±14.3	26.6±11.9	0.006	0.315	0.002
Stroke volume (ml)	57.7±22.2	64.0±13.7	65.4±19.0	0.206	0.601	0.498
C_{PA} (ml/mmHg)	1.4±0.8	2.4±1.1	2.7±1.0	0.001	0.564	0.004

BPA – balloon pulmonary angioplasty; C_{PA}- Pulmonary arterial compliance; PAP – pulmonar artery pressure; PVR – pulmonar vascular resistance

CO 85 Figure

Introduction: Oral anticoagulants are the standard treatment for prevention of stroke in patients with atrial fibrillation (AF). However, some patients still have stroke despite anticoagulation or have contraindications to anticoagulation. The left atrial appendage occlusion (LAAO) is an option for those patients. The use of intracardiac echocardiography (ICE) instead of transesophageal echocardiography guiding LAAO procedures has increased, allowing to reduce the use of general anesthesia.
Objectives: The aim of this study is to describe data regarding safety and efficacy in patients submitted to ICE-guided LAAO.
Methods: In a tertiary center, patients submitted to ICE-guided LAAO were identified. Information regarding baseline characteristics, procedure technical success, complications, hospitalization and follow-up data was noted retrospectively. The registered stroke and bleeding rates were compared with predicted rates using CHA2DS2-VASc and HAS-BLED scores, respectively.
Results: 45 patients underwent ICE-guided LAAO, mean age 75.9 ± 10.3 years old, 66.7%. Permanent AF was present in 68.9% (n = 31), with average CHA2DS2-VASc and HAS-BLED scores of 4.0 ± 1.4 and 3.6 ± 1.1, respectively (predicting a stroke risk of 4.0% per year and a major bleeding risk of 8.7% per year). The LAAO indication was previous major bleeding in 62.2% (n = 28), high bleeding risk in 26.7% (n = 12) and embolic events despite therapeutic anticoagulation in 11.1% (n = 5). The LAAO devices were implanted successfully in 96% of the patients (n = 43). It was noted a complication rate of 8.8% (n = 4), perforation in 4.4% (n = 2), device embolization in 4.4% (n = 2, one of them leading to cardiac arrest and death) and no major vascular complications occurred. No other procedure-related deaths occurred. The average duration of hospitalization after the procedure was 5.7 days. All patients were followed-up for a mean period of 19.0 months. During that period, another death (2.2%) occurred with a non-cardiac cause and the re-hospitalization rate was 26.7% (n = 12), 11.1% (n = 5) for cardiac causes. During the same period, 1 stroke (2.2%) and 6 major bleeding (13.3%) occurred-yearly rates of 1.4% and 8.4%, respectively. The stroke rate is markedly inferior to predicted by the score and the major bleeding is slightly inferior to predicted.
Conclusions: This study provides data about the safety and mainly about the efficacy of the LAAO guided by ICE in patients with high hemorrhagic and embolic risk.

CO 88. ONE-YEAR FOLLOW-UP OF CONTINUOUS ASPIRATION MECHANICAL THROMBECTOMY FOR THE MANAGEMENT OF INTERMEDIATE-HIGH AND HIGH-RISK PULMONARY EMBOLISM: WHAT IS THE LINE BETWEEN UTILITY AND FUTILITY?

Ana Rita Pereira, Rita Calé, Filipa Ferreira, Mariana Martinho, Sofia Alegria, Gonçalo Jácome Morgado, Cristina Martins, Melanie Ferreira, Ana Gomes, Tiago Judas, Filipe Gonzalez, Corinna Lohmann, Débora Repolho, Pedro Santos, Ernesto Pereira, Maria José Loureiro, Hélder Pereira

Hospital Garcia de Orta, EPE.

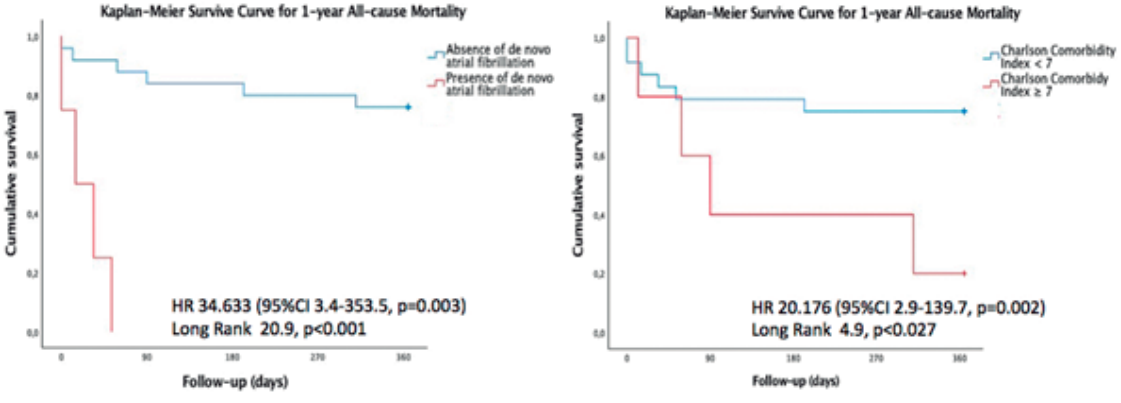
Introduction: Percutaneous catheter-directed treatments have emerged at the last decade for the management of acute high- or intermediate-high-risk pulmonary embolism (PE). Good short-term efficacy and safety have been published, but there are limited data regarding medium- to long-term outcomes. We aimed to evaluate 1-year all-cause mortality of acute high- and intermediate-high-risk PE patients (pts) treated with continuous aspiration mechanical thrombectomy.
Methods: Twenty-nine consecutive pts with acute central PE (mean age 67.2 ± 14.4 years; 72.4% female; 24.1% active cancer; Charlson comorbidity index 4.5 ± 2.1; 82.8% in class>III of original PESI score; 44.8% high-risk PE) were treated with the Indigo Mechanical Thrombectomy System (Penumbra, Inc) between 03/2018 and 03/2020. Clinical success was defined as improvement in hemodynamic and/or oxygenation parameters or pulmonary hypertension or right heart strain at 48 hours after intervention plus survival to hospital discharge. Data regarding severe adverse events potentially related to the procedure, in-hospital and 1-year all-cause mortality were collected.
Results: Clinical success was 75.9% with a significant improvement in mean paO2/fiO2 ratio (+77.1 ± 103.2; p < 0.01), shock index (-0.4 ± 0.4, p < 0.01), need for aminergic support (-75.0%, p < 0.01), right ventricular function (66.6%, p < 0.01) and systolic pulmonary arterial pressure (-10.2 ± 11.5 mmHg, p < 0.01) at 48 hours after procedure. In-hospital survival rate was 82.8% but severe adverse events potentially related to the procedure occurred in 3 pts (10.3%). One-year follow-up was completed in 93.1% of cases and all-cause mortality rate was 34.5% (n = 10 of which half occurred during the index hospital stay). Higher scores of Charlson comorbidity index (5.8 ± 1.9 vs 3.7 ± 1.9, p = 0.01) and de novo atrial fibrillation at admission (40% vs 0%, p < 0.01) were associated with higher 1-year all-cause mortality occurrence and were identified as 2 independent risk predictors by multivariate Cox regression. Kaplan-Meier curves confirmed its significant influence in 1-year survival free of adverse event (Figure). Time among diagnosis and percutaneous treatment (p = 0.99), PESI score (p = 0.24) and other clinical, haemodynamic and echocardiographic features did not influence mortality and suggest similarity of the PE severity at baseline. Technical characteristics were also not associated with mortality.
Conclusions: Aspiration thrombectomy for acute high- and intermediate-high-risk PE was feasible with a high clinical success rate. One-year all-cause mortality was elevated and predicted by high comorbidity index and de novo atrial fibrillation at admission. This data support the national expansion of this new PE treatment, but probably and as similar to other invasive techniques, we need to take into account comorbidities and avoid futility in multimorbidity pts.

CO 89. CONTRAST-INDUCED NEPHROPATHY AFTER STAGED BALLOON PULMONARY ANGIOPLASTY: LOWER RISK COMPARED WITH PERCUTANEOUS CORONARY INTERVENTION

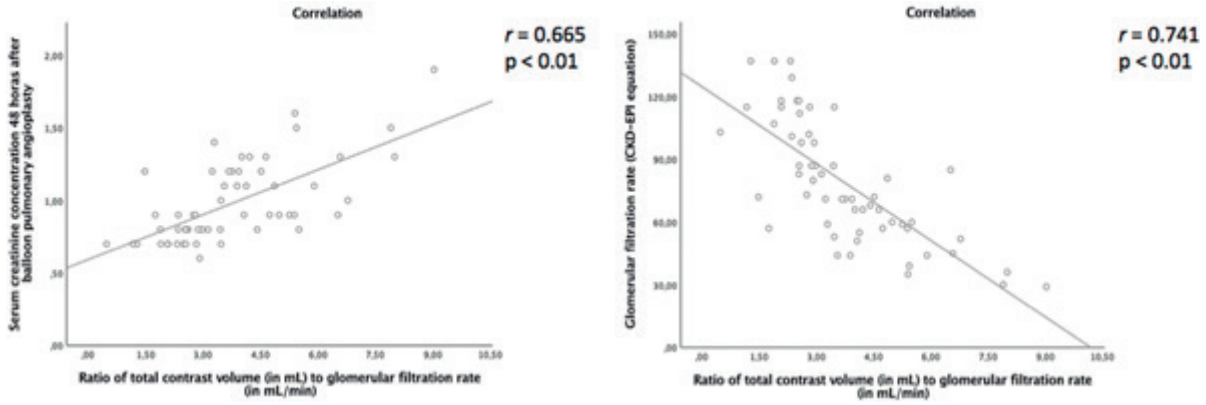
Ana Rita F. Pereira, Rita Calé, Filipa Ferreira, Sofia Alegria, Daniel Sebaiti, Mariana Martinho, Débora Repolho, Pedro Santos, Sílvia Vitorino, Maria José Loureiro, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: The risk of contrast-induced nephropathy (CIN) after left-sided cardiac procedures is reported as 10-15%. When the ratio of total contrast volume in ml to glomerular filtration rate (GFR) in mL/min (ratio V/



CO 88 Figure



CO 89 Figure

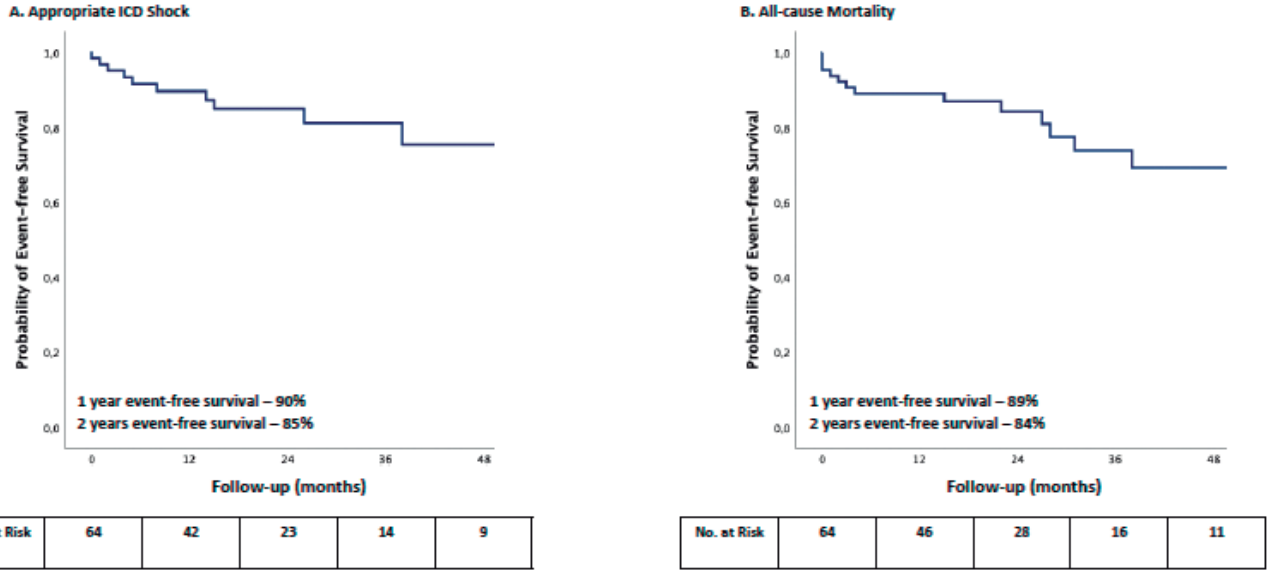
GFR) exceeds 3.7 in percutaneous coronary intervention, the risk increases significantly. However, there are few reports regarding the risk of CIN in patients (pts) with right-sided cardiac interventions such as balloon pulmonary angioplasty (BPA) and ratio V/GFR is not validated for use in this procedures.
Objectives: To assess the prevalence of CIN in pts with chronic thromboembolic pulmonary disease with or without hypertension (CTEPH/CTED) undergoing BPA.
Methods: Prospective single-centre study that included all BPA sessions performed from 2017 to 2020. Serum creatinine concentration (SC) was measured and the GFR was estimated using the Chronic Kidney Disease Epidemiology Collaboration equation (CKD-EPI) before and 48 hours after each BPA procedure and 6 months after BPA treatment completion. CIN was defined as an increase of at least 25% and/or 0.5 mg/dL in SC from the baseline value within 48h of contrast administration.
Results: 76 consecutive BPA sessions were performed in 15 CTEPH/CTED pts: mean age 63.2 ± 14.0 years, 60% female, 86.7% CTEPH, mean of 5.3 ± 1.9 sessions per patient with 4.3 ± 1.9 vessels dilated per session. Mean value of GFR before BPA program was 73.5 ± 26.3 mL/min. All the procedures were performed using low-osmolality contrast agent with a 1:1 dilution ratio with normal saline solution. Pts received 273.0 ± 73.0 mL of contrast per session with a ratio V/GFR 3.7 ± 1.7 mL. SC and GFR did not change significantly within 48h after BPA (+3.1%, p = 0.07 and -3.0%, p = 0.13, respectively). Ratio V/GFR > 3.7 occurred in 44.3% of cases, but CIN occurred in only 5.3% with an increase in SC < 0.5 mg/dL but at least < 25% in 3 cases (+33% in mean) and > 0.5 mg/dL in 1 case. None of the pts required renal replacement therapy. Higher SC and lower GFR 48h after BPA were significantly correlated with greater ratio V/GFR during procedure (r = 0.75, p < 0.01 and r = -0.74, p < 0.01, respectively)-see figure. But neither higher values of ratio V/GFR (OR 1.43; 95%CI 0.84-2.41; p = 0.19) nor V/GFR > 3.7 (OR 1.28; 95%CI 0.17-9.6; p = 0.81) predicted CIN. GFR before procedure did not influence the contrast volume administered (p = 0.901) and the number of vessels (p = 0.63) treated by session (p = 0.45). At 6 months follow-up, there was a trend for SC (-15%, p = 0.43) and GFR (+16%, p = 0.34) improvement in pts with impaired renal function at baseline (GFR< 60 mL/min).
Conclusions: These findings suggested that the occurrence of CIN after BPA was low, raising the hypothesis that the influence of contrast agent on renal function could differ between left- and right-sided cardiac interventions. Although the ratio V/GFR may be correlated with the risk of nephropathy, it is necessary to find a new cut-off to predict CIN in BPA pts.

CO 87. VALIDAÇÃO DO SCORE SPESI NUMA POPULAÇÃO DE UM HOSPITAL PORTUGUÊS

Joana Duarte Albuquerque, Margarida I. Nascimento, André Rosa Alexandre, Bernardo Duque Neves, Daniel Ferreira, Sérgio Garção Baptista, Alexandra Bayão Horta

Hospital da Luz Lisboa.

Introdução: O sPESI (simplified Pulmonary Embolism Severity Index) é um score de risco utilizado para prever a mortalidade a 30 dias nos doentes com tromboembolismo pulmonar (TEP), identificando doentes de baixo risco candidatos a alta precoce ou tratamento em ambulatório.



CO 87 Figura

Objectivos: Validação do score sPESI numa população de um hospital português e avaliação dos doentes com sPESI de 0.
Métodos: Estudo observacional retrospectivo com base na consulta dos processos eletrónicos dos doentes internados num hospital português entre Janeiro de 2007 e Dezembro de 2018, com diagnóstico inaugural de TEP documentado em Angio-TC torácica ou cintigrafia de ventilação-perfusão. Excluíram-se crianças e grávidas. Foi calculado o sPESI para cada doente e comparada a taxa de mortalidade aos 180 dias, tromboembolismo recorrente e hemorragia *major* entre doentes com sPESI de 0 e superior a 0. A análise estatística foi realizada com recurso ao software STATA 15.1.
Resultados: Foram incluídos 405 doentes, 53,3% do sexo feminino, com uma mediana de idade de 67 anos. 70,4% (n = 285) dos doentes tinham sPESI > 0, dos quais 27,4% (n = 111) apresentavam história de insuficiência cardíaca ou doença pulmonar e 23,5% (n = 95) doença oncológica. A mediana de dias de internamento foi seis dias (IIQ 4-10). A taxa de mortalidade aos 180 dias foi de 5,7% (n = 23). O score de sPESI associou-se a maior mortalidade (OR 2,14, IC95% 1,53-2,99), demonstrando boa capacidade discriminatória nesta população (AUC 0,84). História de neoplasia foi o item do sPESI que mostrou maior associação a mortalidade aos 180 dias (OR 2,66; IC95% 1,64-3,68). A mortalidade foi de 0% no grupo com sPESI = 0. A taxa de recorrência aos 180 dias foi de 0,25% (n = 1). Verificou-se hemorragia *major* aos 30 dias em 2,75% (n = 11), tendo todos sPESI > 0.
Conclusões: O score de sPESI é uma ferramenta simples e fácil de utilizar no dia-a-dia, que demonstrou na nossa população um bom poder discriminativo para prever mortalidade aos 180 dias. Doentes com sPESI de 0 têm bom prognóstico, o que reforça a segurança no tratamento destes doentes em ambulatório.

Domingo, 02 Maio de 2021 | 15H45-17H00

Estúdio 3 SPC Porto | CO 18 - Cardiopatias Congénitas

CO 95. DETERMINANTS OF ADVERSE RESPONSE TO EXERCISE IN TREATED AORTIC COARCTATION PATIENTS

Miguel Fogaça da Mata, João Rato, Mariana Lemos, Mafalda Sequeira, Susana Cordeiro, Rui Anjos

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Aortic coarctation is associated with several sequelae after treatment, including abnormal responses to exercise. We investigated determinants of adverse outcomes on exercise testing.

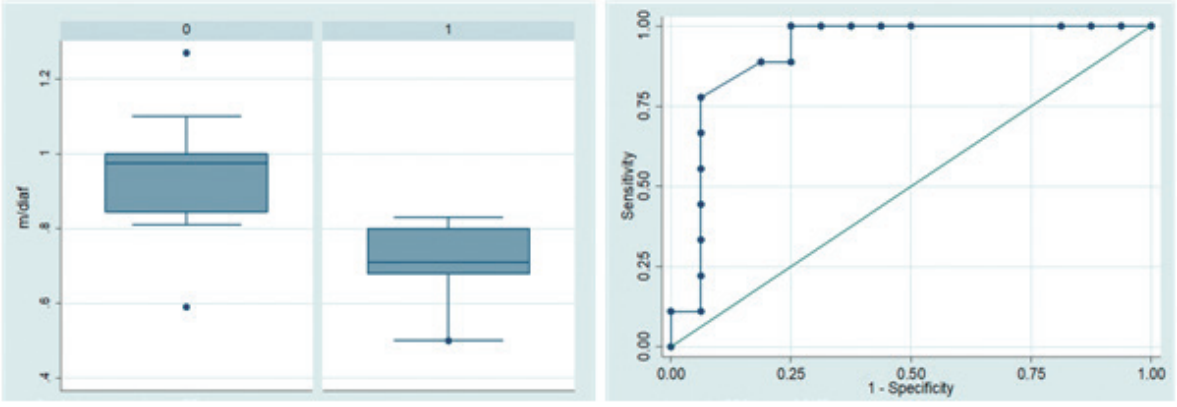
Methods: Asymptomatic patients with successfully treated aortic coarctation (residual isthmic Doppler gradient ≤ 20 mmHg) or with borderline gradient (>20 ≤ 25 mmHg) were prospectively evaluated with exercise testing and exercise echocardiography. Age at evaluation ranged from 8-40 years (mean 20.6). Exclusion criteria included other significant anomalies. Exercise was performed on a treadmill with a Bruce protocol. Isthmic Doppler gradient and flow pattern was assessed within 30 seconds of peak exercise. Adverse exercise outcome was defined by a composite endpoint consisting of exercise hypertension, isthmic diastolic flow on peak exercise Doppler, or ischemic changes. Clinical, physiological and morphological (MR) data were correlated with exercise test results. Statistical analysis was performed with Stata v13. For binomial variables chi-squared tests were used, for continuous variables we used t-test or Wilcoxon rank sum test. Multivariable logistic regression models were built, and the best models chosen using ROC curves.
Results: Forty-one patients were evaluated. Twelve (29%) reached the endpoint, which did not correlate with age, sex, BMI, type of treatment, or indexed LV mass. The endpoint was strongly associated ($p < 0.01$) with higher baseline office systolic BP (mean 140.0 mmHg (95%CI 131.3-148.7) vs. 120.7 mmHg (115.2-126.2) for those not reaching the endpoint); with a borderline isthmic Doppler gradient at rest; with a higher Doppler gradient at peak exercise (mean 47.2 mmHg (37.2-57.2) vs. 30.8 mmHg (26.0-35.6)); and with a lower cardiac MR ratio of narrowest diameter of aortic arch/aortic diameter at diaphragm level (0.71 (0.64-0.79) vs. 0.94 (0.86-1.03)). Multivariable logistic regression, after adjusting for confounders, showed that the ratio of narrowest aortic arch segment diameter/aortic diameter at the diaphragm was the single best predictor of adverse exercise outcome ($p < 0.01$, AUC = 0.9167) with an optimal cut-off point of 0.87.
Left: ratio of narrowest diameter of aortic arch/diameter of the aorta at diaphragm level (m/diaf) plotted against abnormal response to exercise (0 = no, 1 = yes)*. Right: ROC curve for m/diaf against abnormal response to exercise (AUC=0.9167). * - abnormal response to exercise = composite endpoint: hypertensive response, isthmic diastolic flow on exercise, significant ST-T changes.
Conclusions: Treated aortic coarctation patients have a high prevalence of abnormal exercise responses. Persistent aortic hypoplasia determined by a ratio of narrowest aortic arch segment/aorta at the diaphragm < 0.87 by MR was found to be the best predictor of adverse outcomes during exercise.

CO 91. NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS IN ADULT CONGENITAL HEART DISEASE: A SINGLE CENTER STUDY

Pedro Garcia Brás, Tânia Mano, Tiago Rito, Alexandra Castelo, Vera Ferreira, Ana Agapito, Rui Cruz Ferreira, Lídia Sousa

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Adults with congenital heart disease (ACHD) are at an increased risk for thromboembolic events and atrial arrhythmias are common in this population. Novel oral anticoagulants (NOACs) prescription is increasing, however data on efficacy and safety in ACHD is unclear,



CO 95 Figure

particularly in patients (P) with complex CHD. The aim of the study was to review the use of NOACs in various types of ACHD and assess its safety and efficacy.

Methods: Evaluation of consecutive ACHD P started on NOAC therapy from 2014 to 2020. P were followed-up for bleeding or thromboembolic events and mortality. CHA_2DS_2-VASc and HASBLED scores were calculated and risk factors for bleeding were identified.

Results: 93 ACHD P were included, mean age 52 ± 15 years, 58% male, 44% with complex CHD (3.2% with Fontan circulation), with diagnosis of: 22.2% atrial septal defect, 20% tetralogy of Fallot, 11.1% transposition of the great arteries, 10% Ebstein's anomaly, 8.9% ventricular septal defect, 7.8% pulmonary stenosis, 5.6% patent ductus arteriosus, 4.4% AV septal defect, 3.4% univentricular heart, 3.4% coarctation of aorta, 2.2% supra-aortic stenosis and 1% with Uhl disease. Most P were anticoagulated with rivaroxaban (43%), followed by edoxaban (24%), apixaban (20%), and dabigatran (13%). The indications for anticoagulation were: atrial arrhythmias (81%), pulmonary embolism (PE) (6.3%), atrial thrombi (4.3%), thromboprophylaxis in Fontan circulation (3.2%), deep vein thrombosis (3.2%) and stroke (2%). 66% of P had a CHA_2DS_2-VASc score ≥ 2 and 82% HASBLED score ≤ 2. In a mean follow-up of 41 ± 21 months (400.4 patient-years), there were embolic events in 2P (1 splenic infarction and 1 PE) albeit both were in the context of oral anticoagulation interruption. The cardiovascular mortality was 2% and allcause mortality 5%, however with no relation to thrombosis or bleeding events. 6 P (6.5%) suffered a minor and 3 P (3.2%) suffered a major bleeding, a median time of 12 (IQR 15) months after starting NOAC therapy. The annual risk for bleeding was 2.2%/patient/year. P with bleeding events showed no significant difference regarding age (55 ± 16 vs 52 ± 15 years, p = 0.587), gender (13% female vs 5.1% male, p = 0.295) or CHD type (p = 0.582). 8.6% of P required dose reduction, mostly for bleeding (3.2%) or renal impairment (2.2%). Renal disease was a strong risk factor for major bleeding (HR 14.6 [95%CI 1.23-73.6], p = 0.033 and multivariate analysis showed that an increased HASBLED score was an independent predictor of minor (adjusted HR 3.44 [95%CI 1.13-10.52], p = 0.030) and major (adjusted HR 5.29 [95%CI 1.14-24.45], p = 0.033) bleeding complications.

Conclusions: Anticoagulation with NOACs is a safe and effective option for selected ACHD P, although bleeding complications were not negligible, particularly in P with renal disease. Larger scale research studies are required, especially regarding complex CHD such as P with Fontan circulation.

CO 90. IMPLANTABLE CARDIOVERTER DEFIBRILLATORS IN ADULT CONGENITAL HEART DISEASE: LONG-TERM FOLLOW-UP OF THERAPIES, COMPLICATIONS AND CLINICAL EVENTS

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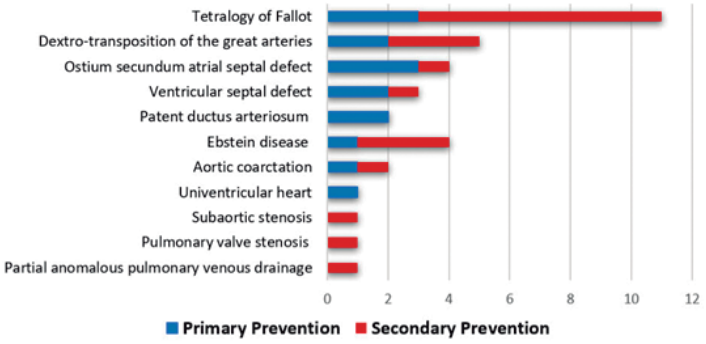
Introduction: Adults with congenital heart disease (ACHD) at increased risk for sudden cardiac death (SCD) often undergo implantable cardioverter



ICD		
ICD indications		
Primary prevention		16 (47.1%)
Secondary Prevention		18 (52.9%)
Monomorphic VT		14
Ventricular fibrillation		2
Polymorphic VT		2
Time to ICD after first cardiac surgery, years (median, IQR)		21.8 (10.7-36.3)
Device-related complications		
Pocket reintervention		2 (5.9%)
Lead replacement due to dysfunction		2 (5.9%)
System extraction due to pocket infection		2 (5.9%)
Inappropriate therapies		7 (20.6%)
Sinus tachycardia		1
Atrial flutter/fibrillation		3
Other supraventricular tachycardia		3
ICD therapies		18 (52.9%)
Antitachycardia pacing (ATP)		1 (2.9%)
Shock		6 (17.6%)
ATP + shock		10 (29.4%)
Time to first therapy, months (median, IQR)		25.3 (13.7-52.9)
Ventricular fibrillation		3 (8.8%)
Ventricular tachycardia		12 (38.2%)
Events	**Incidence (n, %)**	**Annual rate (%)**
Death/transplant/hospitalization for HF	16 (47.1%)	10.5
Death	10 (29.4%)	6.5
Transplant	3 (8.8%)	2.0
Hospitalization	20 (62.5%)	13.9
Hospitalization for heart failure	13 (40.6%)	9.0
Hospitalization for arrhythmia	11 (34.4%)	7.6

CO 90 Figure

defibrillator (ICD) implantation at young ages. Data evaluating the long-term outcomes of ICD in this population remain scarce. We aimed to characterize the population with ACHD and an ICD.
Methods: Consecutive ACHD submitted to an ICD implantation in a single tertiary center were evaluated. Data on baseline clinical features, heart defect, indication for ICD, type of device, ICD-related complication and therapies and mortality during follow-up were collected.
Results: A total of 34 patients (P) were evaluated. Median age at implant was 39.3 years (interquartile range [IQR] 29-5-53.6) and median left ventricular ejection fraction (LVEF) was 43.5% (IQR 28.0-53.3). The most common heart defect was tetralogy of Fallot (11P; 32.3%), followed by dextro-transposition of the great arteries, ostium secundum atrial septal defect (ASD) and ventricular septal defect (Figure 1). All P were submitted to surgical correction (median age at surgery 12.5 years [IQR 3.0-29.1]). Sixteen P underwent ICD implantation for primary prevention of SCD, owing to complex cardiopathy and ventricular dysfunction, and 18P due to spontaneous ventricular tachyarrhythmias. The implantable devices were a single-chamber ICD in 55.9%, a double-chamber ICD in 17.6%, a subcutaneous ICD in 20.6% and a CRT-D in 5.9%. During a median follow-up of 4.5 years (IQR 2.1-8.8), 52.9% of the P received appropriate ICD therapies, corresponding to 37.5% and 66.7% of primary and secondary prevention P, respectively. Median time to first arrhythmic event was 25.3 months (IQR 13.7-52.9). Six P (17.6%) suffered ICD-related complications and 20.6% received inappropriate therapies due to supraventricular tachyarrhythmias. During follow-up, 8.8% were submitted to heart transplant and 29.4% died (Table 1). ICD therapies were associated with a composite of death, cardiac transplantation and hospital admission (OR 5.0, 95%CI 1.0-24.3).
Conclusions: ACHD with ICD experience high rate of appropriate therapies, including those implanted for primary prevention. The long-term burden of ICD-related complications and inappropriate shocks underlines the need for careful risk stratification and close monitoring. The increased survival of this population justifies collecting data on long-term outcomes to improve its care.

CO 93. CAUSES OF DEATH IN ADULT CONGENITAL HEART DISEASE

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Introduction: Mortality in adults with congenital heart disease (CHD) is known to be increased. Despite a significant raise in life expectancy over the last decades, it remains lower than for the general population. We aimed to analyse the circumstances of death and mortality patterns in adults with CHD (ACHD).
Methods: Retrospective analysis of adult patients (pts) with CHD followed in one terciary care center who died between 1980 and December 2020. Data relating to the cardiac diagnosis, comorbidities, interventions, complications and causes of death were evaluated.
Results: 251 pts were included, 51% male, median age of death 41 (28). Most of the deceased patients had severe CHD (n = 135), and 8% (n = 21) had a congenital syndrome. Regarding causes of death, 166 pts (66%) died CHD-related, 24 pts (9%) died non-CHD related, and in 61 pts (24%) no information regarding the cause of death was available (Figure 1). The most common cause of CHD-related death was progressive heart failure (n = 67, 40%), followed by sudden cardiac death (n = 53, 32%). As expected, the age of death in pts with severe CHDs was lower than pts with mild or moderate CHD, yet no association was found between the complexity of the defect and the cause of death. Mortality patterns according to individual CHD are identified in Figure 2.
Conclusions: The vast majority of ACHD pts die from CHD-related causes, with heart failure and sudden cardiac death being the leading causes of death. Variations in mortality patterns can be found according to individual CHD.

CO 92. TRENDS IN MORTALITY OF ADULT CONGENITAL HEART DISEASE PATIENTS IN THE LAST FOUR DECADES

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Introduction: Medical, surgical, and technological advances over the past decades increased the life expectancy of congenital heart disease (CHD) patients (pts), with > 90% reaching adulthood. Nonetheless, mortality for adults with CHD (ACHD) is still higher than for the general population. We aim to analyse trends in mortality and causes of death of ACHD.
Methods: Retrospective analysis of pts followed in an ACHD outpatient clinic, in one tertiary center, who died between 1980 and December 2020. Data relating to the cardiac diagnosis, symptoms, interventions, comorbidities, and causes of death were analysed.
Results: During a median follow-up of 8.9 years (IQR 2.2-17), 251 pts of 3,725 (6.7%) died during the study period: 127 males (51%), mean age at death 44.9 ± 18.1 years, 54% with severe CHD. The majority of these deaths were

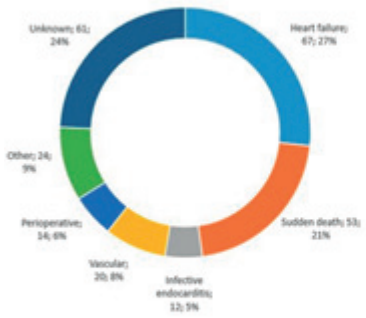

Fig. 1. Causes of death

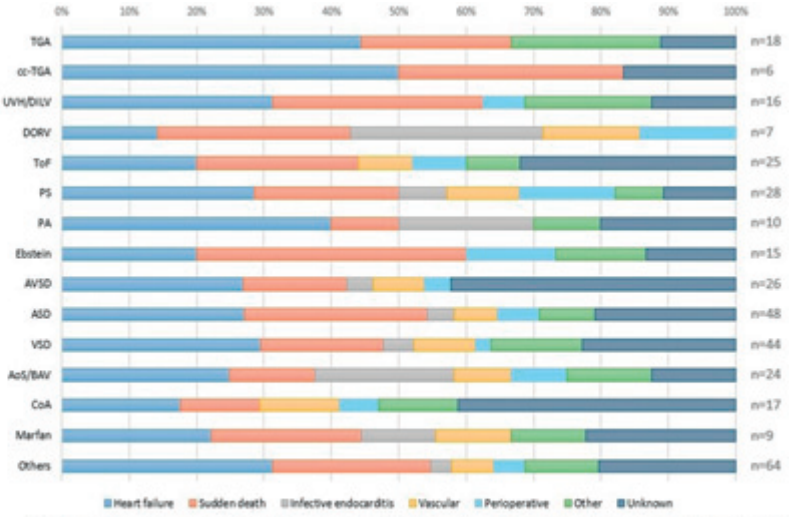

Fig. 2. Causes of death by underlying defect. cc-TGA, congenitally corrected transposition of the great arteries; PA, pulmonary atresia associated with ventricular septal defect; UVH/DILV, univentricular heart/double inlet left ventricle; AVSD, atrioventricular septal defect; ToF, tetralogy of Fallot; ASD, atrial septal defect; DORV, double outlet right ventricle; AoS/BAV, aortic stenosis/bicuspid aortic valve; PS, pulmonary stenosis; TGA, transposition of the great arteries; CoA, aortic coarctation; VSD, ventricular septal defect; Ebstein, Ebstein's anomaly; Marfan, Marfan syndrome.

CO 93 Figure

CHD-related (171 pts-68.1%) with no statistically significant differences over the years vs non-cardiovascular death (Table 1). However, a paradigm shift was noticed: in the first years the main cardiac cause was sudden-death that was replaced by heart failure in the last decade. Also, the mean age at death increased over the years (33 ± 14.9 years until 2000 vs 52.3 ± 17 years after the year 2010, p < 0.001) as the number of implantable devices (4 vs 20, p = 0.05).

Table 1. Characteristics of Adult Congenital Heart Disease patients who died during the study period, according to time.

	Years 1980-2000	Years 2001-2010	Years 2011-2020
Patients (N)	57	96	98
Male gender (%)	30 (53%)	50 (52%)	46 (47%)
Age (mean), years	33±14.9	42.8±17.8	52.3±17
Follow-up (median), years	5.6	10.8	16.5
Classification			
Mild	5 (9%)	8 (8%)	6 (6%)
Moderate	23 (40%)	29 (30%)	44 (45%)
Severe	29 (51%)	59 (60%)	48 (49%)
Previous surgery	31 (54%)	36 (38%)	52 (53%)
Mean number of interventions	1.4	1.5	1.6
Causes of death			
Cardiovascular	45 (79%)	61 (64%)	69 (70%)
Non-cardiovascular	2 (4%)	7 (7%)	14 (14%)
Unknow cause	10 (17%)	28 (29%)	15 (15%)
Cardiovascular death			
Sudden death	15 (26%)	25 (26%)	18 (17%)
Heart failure	13 (23%)	21 (22%)	35 (36%)
Infective endocarditis	3 (5%)	4 (4%)	5 (5%)
Perioperative	5 (9%)	4 (4%)	4 (4%)
others	9 (16%)	7 (7%)	7 (7%)
Implantable device			
Pacemaker	3	9	12
ICD	1	3	7
CRT	0	0	1

ICD – Implantable Cardioverter Defibrillator; CRT – Cardiac Resynchronization Therapy

Conclusions: Causes of death of ACHD patients are in the majority still CHD-related. However, in the last decade, according to the increase in life expectancy, heart failure became the leading cause of death.

CO 94. ARRHYTHMIA ABLATION IN CONGENITAL HEART DISEASE PATIENTS-A SINGLE CENTRE RETROSPECTIVE STUDY

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Introduction: Arrhythmias are an important cause of morbidity and mortality in congenital heart disease (CHD) patients. They can be treated by ablation during electrophysiological studies, but are usually complex cases, due to the anatomical variation (pre and post-surgery) and presence of structural disease and scar tissue.
Methods: Retrospective review of ablation cases in CHD patients in a single centre from 2001 to 2020. Data on demographics, CHD group, arrhythmia mechanism, treatment outcomes (immediate and long term), and complications was collected.
Results: 53 patients were identified (51% male), who had a total of 77 procedures. Median age at first procedure was 29.8 years (min 0.7, max 65.8). The most prevalent CHD group was right obstructions (25 pts, 47.2%), followed by septal defects (13 pts, 24.5%), left obstructions (4 pts, 7.5%), tricuspid valve malformations (4 pts, 7.5%), functionally univentricular heart post-Fontan operation (4 pts, 7.5%), post-transposition of the great arteries post-Senning operation (2 pts, 3.8%) and Truncus arteriosus (1 pt, 1.9%). The median number of surgeries was 1 (min 0, max 4), and 12 pts (22.6%) underwent at least one palliative surgery. On the first procedure arrhythmias found were right atrial macroreentrant taquicardia (23 pts, 43.4%), right atrial focal tachycardia (4 pts, 7.5%), left atrial focal tachycardia (1 pt, 1.9%), atrial fibrillation (4 pts, 7.5%), accessory pathway-mediated atrioventricular (AV) reentrant tachycardia (7 pts, 13.2%), AV nodal reentrant tachycardia (4 pts, 7.5%), right ventricular focal tachycardia (3 pts, 5.7%), right ventricular macroreentrant tachycardia (4 pts, 7.5%), presence of substrate for right ventricular macroreentrant tachycardia without clinical manifestations (1 pt, 1.9%), and non-specified atrial tachycardia (2 pts, 3.8%). On first procedure complete success was achieved in 81.1% of patients, partial success occurred in 3.8% and empirical treatment was performed in 1.9% (1 pt); palliative treatment (AV node ablation) was performed in 3.8%; procedure failure occurred in 7.5%. Recurrence of (any) arrhythmia occurred in 39.6%, but of these 28.6% were of a different mechanism. 18 patients had at least one repeat procedure, and on the first repeat procedure complete success was achieved in 72.2%.
Conclusions: CHD patients present a challenging population, but on our series it was possible to treat their arrhythmias, even though multiple procedures were frequently necessary.

Domingo, 02 Maio de 2021 | 10H30-11H45

Sala Virtual 3 | CO 19 - Hipertensão Pulmonar

CO 101. COMPARISON OF 2-YEARS FOLLOW-UP OF OPTIMAL MEDICAL THERAPY VERSUS BALLOON PULMONARY ANGIOPLASTY FOR INOPERABLE CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION: IS IT NOW TIME TO WITHDRAWAL OF ISOLATED MEDICAL THERAPY?

Ana Rita Pereira, Rita Calé, Filipa Ferreira, Sofia Alegria, Daniel Sebaiti, Mariana Martinho, Débora Repolho, Pedro Santos, Sílvia Vitorino, Maria José Loureiro, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Balloon pulmonary angioplasty (BPA) has emerged as a therapeutic option for chronic thromboembolic pulmonary hypertension (CTEPH) patients (pts) considered ineligible for pulmonary endarterectomy (PEA). The initial publications of the worldwide work-groups showed good short-term outcomes for the technique, but there are limited data regarding medium-term outcomes and its comparison with optimal medical treatment (OMT).
Objectives: To compare the medium-term outcomes of OMT versus (vs) BPA in inoperable CTEPH.
Methods: Retrospective single-centre study of consecutive pts with CTEPH followed in a referral centre for Pulmonary Hypertension. Selected those pts considered ineligible for PEA and followed at least 2-years. Comparison between OMT alone [maximum tolerated doses of pulmonary vasodilator drugs (PVD), as indicated] versus BPA (pts who completed the program with or without OMT). Endpoint was a composite of all-cause death and unplanned right heart failure admission at 2-year.
Results: From 62 pts, 19 pts were included (11 pts were excluded due to recent diagnosis; 32 were submitted to EAP): mean age 65.0 ± 15.3 years, 89.5% female. At diagnosis, all pts had functional limitation and elevated serum NTproBNP (median value 1,255.0 pg/mL). Mean pulmonary arterial pressure (mPAP) was 46.2 ± 9.3 mmHg and pulmonary vascular resistance (PVR) 15.3 ± 8.3 Wood units (WU). Concerning treatment, 12 pts (63.2%) underwent OMT alone. These pts had higher NTproBNP levels (2,670.0 vs 538.0 pg/mL, p < 0.01) and PVR (19.7 ± 7.6 vs 9.7 ± 5.4 WU, p = 0.01)

A

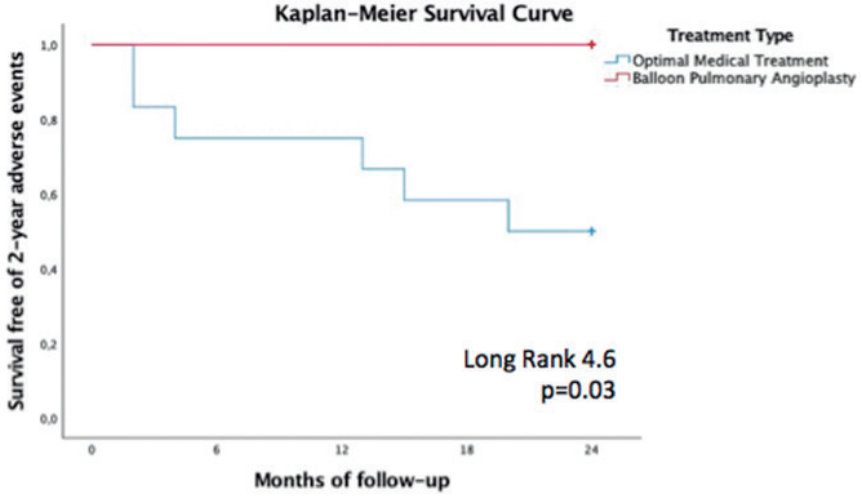
Table. Comparison of 2-years follow-up of optimal medical therapy (OMT) versus balloon pulmonary angioplasty (BPA) for inoperable chronic thromboembolic pulmonary hypertension

Variables*	Baseline			2-year follow-up			Baseline vs. 2-year follow-up	
	OMT (n=12)	BPA (n=7)	p-value†	OMT (n=12)	BPA (n=7)	p-value†	OMT (n=12)	BPA (n=7)
Clinical characteristics								
Age (years)	63.2 ± 18.3	68.1 ± 8.3	p = 0.42					
Female Gender (*n*, %)	12 (100%)	4 (57.1%)	p = 0.12					
Limited functional class(*n*, %)*	12 (100%)	312.0	p = 0.04	10 (83.3%)	0	p < 0.01	p = 0.99	p < 0.01
6MWT (m)	225.3	538.0	p = 0.19	284.2	430.0	p = 0.01	p = 0.33	p = 0.20
NT-proBNP (pg/mL)	2670.0		p < 0.01	2004.0	132.0	p < 0.01	p = 0.33	p = 0.06
Haemodynamics features								
Mean PAP (mmHg)	47.5 ± 2.6	44.4 ± 14.6	p = 0.60	46.5 ± 6.6	25.1 ± 6.7	p < 0.01	p = 0.92	p = 0.01
Mean RAP (mmHg)	9.6 ± 3.8	6.4 ± 4.0	p = 0.14	10.0 ± 7.2	5.7 ± 2.4	p = 0.17	p = 0.77	p = 0.61
PVR (uWood)	19.7 ± 7.6	9.7 ± 5.4	p = 0.01	13.3 ± 6.8	2.9 ± 0.8	p = 0.05	p = 0.23	p = 0.01
Cardiac output (L/min)	2.9 ± 1.0	4.4 ± 1.1	p = 0.01	3.7 ± 0.5	5.0 ± 1.3	p = 0.09	p = 0.38	p = 0.21
Cardiac index (L/min/m²)	1.6 ± 0.3	2.4 ± 0.5	p < 0.01	2.2 ± 0.3	2.6 ± 0.5	p = 0.12	p = 0.12	p = 0.36
SvO_2 (%)	58.8 ± 12.5	69.3 ± 12.6	p = 0.16	66.1 ± 2.8	70.4 ± 4.7	p = 0.19	p = 0.99	p = 0.28
Echocardiographic features								
RV dysfunction (*n*, %)	6 (50%)	3 (42.9%)	p = 0.64	5 (41.7%)	0	p = 0.02	p = 0.08	p < 0.01

* Functional Classification according World Health Organization: I – without limitation of physical activity; II – slight limitation of physical activity; III – marked limitation of physical activity; IV – inability to carry out any physical activity without symptoms.
# Continuous variables are expressed as mean-± standard deviation with exception of NT-proBNP and 6MWT expressed as median

† After adjustment by Cox regression, no difference in baseline or follow-up features besides treatment influenced the outcome
BPA – Balloon Pulmonary Angioplasty; OMT – Optimal Medical Treatment; NT-proBNP – N-terminal pro-brain natriuretic peptide; PAP – Pulmonary Artery Pressure; PVR – Pulmonary Vascular Resistance; RAP – Right atrial pressure; RA – Right atrial; RV – Right ventricular; 6MWT – Six-minute walking test; SvO_2 – Mixed venous oxygen saturation.

B



CO 101 Figure

and lower CI (1.6 ± 0.3 vs 2.4 ± 0.5 L/min/m², p < 0.01) at baseline; the remaining basal features didn't differ among groups (Figure-A). At 2-year follow-up, 71.4% of pts submitted to BPA were under PVD with a mean of 1 ± 0.8 drugs per patient and no difference compared to OMT group (83.3%, 1.7 ± 0.9 drugs per patient), although oxygen therapy was higher in medical group (50% vs 0%, p = 0.04). A significant overall improvement was observed in BPA group (Table-A): all pts were in functional class I (p < 0.01), no one had right ventricular (RV) dysfunction (p < 0.01) and mPAP decreased to 25.1 ± 6.7 mmHg (p = 0.01) and RVP to 2.9 ± 0.8 WU (p = 0.01). Inversely, no change was observed in pts under OMT alone (p>0.05 in all, Table-A). Endpoint rate was 31.6% with all adverse events occurring in the OMT group (50% vs 0%, p = 0.04). After adjustment by Cox regression, no difference in baseline or follow-up features besides treatment influenced the outcome. Kaplan-Meier analysis (Figure-B) confirmed significant benefit of BPA in 2-year outcome occurrence (long rank 4.6, p = 0.03).

Conclusions: BPA strategy seems to improve medium-term functional capacity, RV function and haemodynamics and decrease oxygen therapy dependence in inoperable CTEPH. Pts under OMT alone have a poor prognosis. These data encourage the development and implementation of the technique for inoperable CTEPH.

CO 99. A COMPARATIVE ANALYSIS OF THE DIAGNOSTIC PERFORMANCES OF FOUR CLINICAL PROBABILITY MODELS TO RULE OUT PULMONARY EMBOLISM

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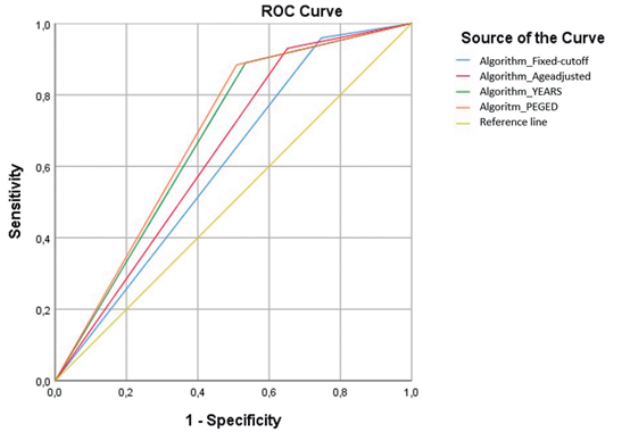
[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Ruling out pulmonary embolism (PE) through a combination of clinical assessment and Ddimer is crucial to avoid excessive computed tomography pulmonary angiography (CTPA), and different algorithms should be considered as an alternative to the fixed cutoff to achieve that goal.
Objectives: To compare sensitivity, specificity, and reduction in CTPA requests of 4 algorithms to rule out PE: fixed Ddimer cutoff, age-adjusted, YEARS and PEGeD.

Methods: Retrospective study of consecutive outpatients who presented to the emergency department and underwent CTPA for PE suspicion from April 2019 to May 2020. The clinical-decision algorithms were retrospectively applied. In fixed and age-adjusted cut-off, high probability patients are directly selected for CTPA. In fixed cutoff, low to moderate probability patients undergo CTPA if Ddimer ≥ 500 μg/L. In age-adjusted cutoff, low to moderate probability patients perform CTPA if Ddimer ≥ 500μg/L in patients who are 50 years of age or younger, and if Ddimer level was more than 10 times the patient's age in patients who are older than 50 years. YEARS includes 3 items (signs of deep vein thrombosis, haemoptysis and whether PE is the most likely diagnosis): patients without any YEARS items and Ddimer ≥ 1000ng/mL or with ≥ 1 items and Ddimer 500 ng/mL perform CTPA. In the PEGeD, patients with high clinical probability or with intermediate and Ddimers >500μg/L or low probability and Ddimer >1,000 μg/L are selected for CTPA.
Results: We selected 571 patients and PE was confirmed by CTPA in 172 patients. Compared with a fixed Ddimer cutoff, age-adjusted was associated with a significant increase of specificity (p < 0.001), correctly avoiding 38 CTPAs, without losing sensitivity. YEARS and PEGED resulted in a marked increase in specificity, compared to the fixed cutoff, but with impairment of sensitivity (p < 0.001). PEGeD had the worst sensitivity, associated with 13 more false negatives (FN) than the fixed cutoff. Despite the lack of difference between PEGed and YEARS strategies regarding sensitivity, PEGED had significantly higher specificity (p < 0.001) and allowed to correctly avoid a higher number of CTPA (95 vs 85), compared to the fixed cutoff. Results are summarized in table 1 and the AUC for each algorithm is shown in the figure.

	AUC	Sensitivity (%)	Specificity (%)	Correctly avoid CTPAs (n)	False negatives (n)
Fixed cutoff	0.61 (p<0.001)	96	25	101	7
Age-adjusted	0.64 (p<0.001)	93	35	139	12
YEARS	0.68 (p<0.001)	89	47	186	19
PEGeD	0.68 (p<0.001)	88	49	196	20

Table 1 –Performance of each diagnostic algorithm



Conclusions: Compared to fixed d-dimer cutoff, all algorithms were associated with increased specificity. The age-adjusted cutoff was the only that was not associated with a significant decrease in sensitivity when compared to fixed cutoff, allowing to safely reduce the need to perform CTPA.

CO 100. COMPLICATIONS OF BALLOON PULMONARY ANGIOPLASTY FOR CHRONIC THROMBOEMBOLIC PULMONARY DISEASE ACCORDING THE CLASSIFICATION PROPOSED BY THE 6TH WORLD SYMPOSIUM ON PULMONARY HYPERTENSION

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Introduction: Balloon pulmonary angioplasty (BPA) is a complex procedure and not risk free. In an attempt to standardize reports of BPA complications in the several centers, a classification of complications was proposed by the task force on chronic thromboembolic hypertension (CTEPH) in the 6th World Symposium on Pulmonary Hypertension (WSPH).
Objectives: To determine the prevalence of BPA complications according to the classification of 6th WSPH and to identify its predictors.
Methods: Detailed procedural and technical aspects were collected for consecutive patients (pts) with inoperable, residual/recurrent chronic thromboembolic disease, undergoing BPA at a single institution from December/2017 to December/2020. Per procedure logistic regression analysis was used to evaluate the predictive variables for complications.
Results: A total of 76 BPA sessions in 15 pts were performed (mean age 63.2 ± 14.0 years; 60.0% women; 86.7% CTEPH). Mean pulmonary artery pressure and pulmonary vascular resistance before the first BPA session were 33.1 ± 13.3 mmHg and 4.8 ± 3.2 woods unit, respectively (73.3% of pts under vasodilator therapy). Femoral access was used for all pts. Mean vessels treated per procedure were 4.3 ± 1.9 (324 vessels in total). Webs, subtotal occlusions, ring-like stenosis and total occlusions were noted in 215 (66.4%), 58 (17.9%), 31 (9.6%) and 20 (6.2%) treated vessels, respectively. We performed 21 pressure-wire-guided sessions (27.6%). Intravascular imaging was used in 6 procedures (7.9%). Average time of fluoroscopy was 60.3 ± 14.0 minutes and volume of contrast 273.0 ± 73.0 mL per session. Procedure-related adverse events occurred in 25.0% of the interventions (27.6% in the first two years vs 16.7% in the last two). Pulmonary artery vascular injuries were noted in 6 BPA vessels (7.9% per procedure and 1.9% per treated vessel): haemoptysis in all, but perforation was only detected angiographically in 3 of them (balloon inflation was performed for 2 distal perforations, and 1 perforation sealed without any intervention). Vascular dissection in distal lesions occurred in 4 cases (5.3%) with no need of transcatheter or surgical procedures. We had 3 lung injuries, all grade 2. None of the pts required oral intubation or mechanical ventilation. Extra-pulmonary complications were illustrated in table. Importantly, there was no peri-procedural death. The occurrence of vascular or lung injuries was 0% in pressure-wire-guided BPA versus 14.5% in non-guided (p = 0.098). Multivariate analysis revealed that age (OR 1.05; CI 1.01-1.10; p = 0.030) was the only independent predictor of complications.

Table. Balloon pulmonary angioplasty complications according the 6th World Symposium on Pulmonary Hypertension

During the procedure	*n* (%)	*After the procedure*	*n* (%)
Vascular injury with hemoptysis	6 (7.9%)	Lung injury	3 (3.9%)
Vascular dissection	4 (5.3%)	Contrast nephropathy	4 (5.3%)
Allergic reaction to contrast	0	Access site complications	1 (1.3%)
Adverse reaction to local anesthesia	1 (1.3%)	Radiation injury	0

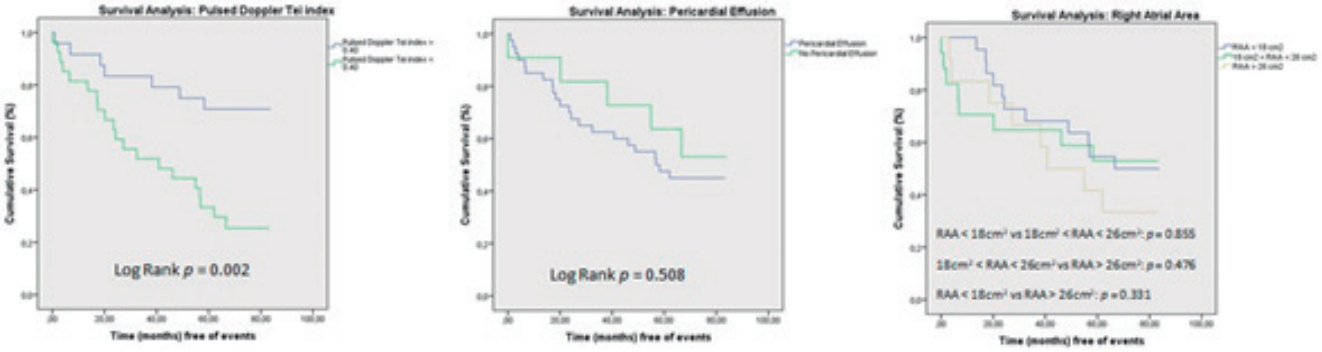
Conclusions: In our experience, BPA can be safely performed in inoperable, residual or recurrent CTEPH or CTED pts, with 25% minor procedural-related complications but no major adverse event. Age was the strongest factor related to the occurrence of complications.

CO 96. IMPROVING RISK STRATIFCATION OF PULMONARY HYPERTENSION PATIENTS

João Pedro Reis[1], Marta Nogueira[2], Lídia Sousa[1], Luísa Branco[1], Ana Galrinho[1], Rui Ferreira[1]

[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.
[2]Hospital de Cascais.

Introduction: According to the 2016 ESC/ERS Guidelines on Pulmonary Hypertension (PH), the right atrial area (RAA) and the presence of a pericardial effusion (PE) are the two main echocardiographic prognostic markers in PH patients (pts). Our aim was to assess the predictive ability of these two parameters.
Methods: Pts with PH were prospectively studied and several clinical/demographic/echocardiographic were retrieved as well as data from six-



CO 96 Figure

minute walk test (6MWT) and brain natriuretic peptide (BNP). All-cause mortality was analyzed by PE, RAA and other echocardiographic parameters for positive (PPV) and negative predictive value (NPV) to detect if the current guideline recommended cut-offs can precisely stratify risk in this setting. A survival analysis was performed to evaluate risk stratification (RS) provided by several different cut-offs.

Results: A total of 51 PH pts (mean age 54 ± 46 years, 33.3% male, baseline BNP of 342.4 ± 439.9 pg/mL, mean 6MWT distance of 360.3 ± 109.2 meters and baseline pulmonary artery systolic pressure of 78 ± 26mmHg), of which 64.7% had Group I PH (GI) and 35.3% presented chronic thromboembolic pulmonary hypertension. There were no significant differences between these two groups, however pts in GI were significantly younger (p = 0.001), achieved a lower 6MWT distance (p = 0.038) and had worse values of right ventricular strain (p = 0.040). 27 pts (52.9%) died during a mean follow-up of 52 months, with no differences between groups (p = 0.756). The presence of a PE had a low NPV and PPV for the primary endpoint (45.0% and 45.5%, respectively), aswell as the guideline recommended cut-offs for RAA (18cm^2: NPV - 50.0% and PPV-55.2%; 26cm^2: NPV - 51.3% and PPV-66.7%). A Pulsed Doppler Tei index (TI_p) cut-off of 0.40 had a higher NPV (70.8%) and PPV (74.1%). By Kaplan-Meier analysis, neither the presence of PE (log rank p = 0.508) nor the recommended RAA cut-offs provided accurate risk discrimination (log rank p > 0.05 for all). Pts below a TI_p cut-off of 0.40 presented a significantly lower survival during follow-up (log rank p = 0.002).

Conclusions: The currently recommended echocardiographic prognostic markers cannot precisely discriminate risk in PH pts. Markers of Right Ventricular Dysfunction may improve RS in this population.

CO 98. REPERFUSION IN HIGH-RISK ACUTE PULMONARY EMBOLISM: CAN THE PESI SCORE PREDICT OUTCOMES?

Mariana Martinho, Rita Calé, Sofia Alegria, Filipa Ferreira, Maria José Loureiro, Tiago Judas, Melanie Ferreira, Ana Oliveira Gomes, Maria Francisca Delerue, Hélder Pereira

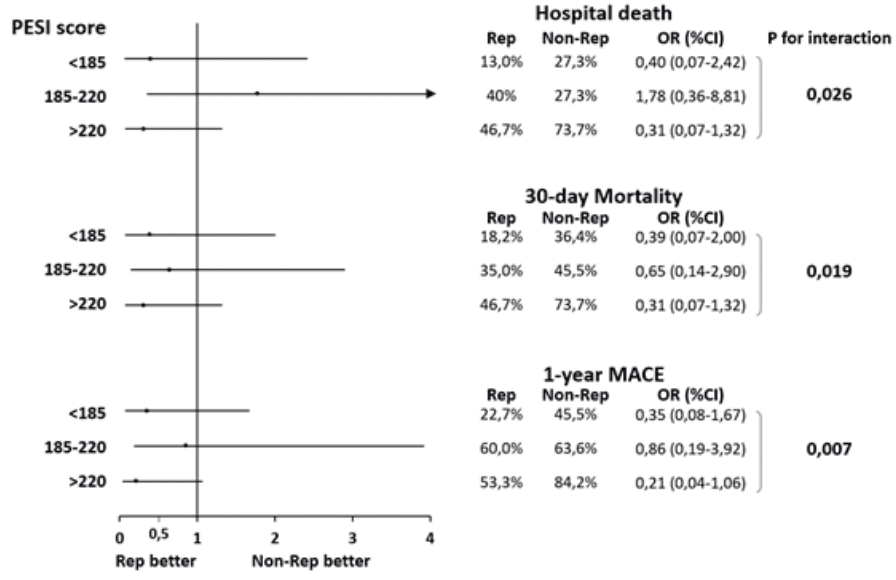
Hospital Garcia de Orta, EPE.

Introduction: Acute pulmonary embolism (PE) is one of the leading causes of cardiovascular death worldwide. Haemodynamic (HD) instability defines high risk (HR) of early mortality and reperfusion treatment is the standard of care for rapid relieve of right ventricle (RV) overload in these situations. The impact of reperfusion in long-term outcomes is not well established. The PE Severity Index (PESI) score is used to stratify the risk of early death in HD stable patients (pts) and was not validated to predict outcomes in HR-PE.

Objectives: Estimate the prognostic performance of the PESI score in HR-PE and study its possible interaction in acute and long-term outcomes of reperfusion in HR-PE pts.

Methods: Retrospective single-centre study of consecutive HR-PE pts, defined by the 2019 ESC guidelines criteria, between 2008-2018. Logistic regression analysis was performed to test for an interaction between tertiles of the PESI score and reperfusion in early-mortality (during hospitalization and at 30 days) as well as 1-year MACE (a composite of cardiovascular mortality, PE recurrence or chronic thromboembolic pulmonary hypertension).

Results: Of a total of 1,955 PE pts, 102 fulfilled the inclusion criteria (72.5% pts initially presented with HD instability with the remaining developing



CO 98 Figure

HR-PE after hospital admission). Mean age was 68 ± 15 years and 60% were females. In-hospital and 30-day mortality were 39.6% and 43.0%, respectively. At one-year follow-up, MACE was 55.0%. Mean PESI at the time of HR-PE diagnosis was 200 ± 39 and showed significant differences for in-hospital mortality (189 ± 38 vs 217 ± 34; OR 1.02, 95%CI 1.00-1.03, p < 0.001), 30-day mortality (191 ± 38 vs 214 ± 36; OR 1.02, 95%CI 1.00-1.03m p = 0.004) and 1y-MACE (186 ± 41 vs 214 ± 32; OR 1.02, 95%CI 1.01-1.03, p < 0.001). Total reperfusion rate was 57.8% and was also associated with lower in-hospital mortality (OR 0.45, 95%CI 0.20-1.02; p = 0.057), 30-day mortality (OR 0.35, 95%CI 0.15-0.80; p = 0.012) and 1y-MACE (OR 0.35, 95%CI 0.15-0.80; p = 0.014). The benefit of reperfusion was significantly influenced by the PESI score categorized by tertiles (Figure).
Conclusions: Although the PESI score stratifies HD stable pts, in this population it was able to predict cardiovascular outcomes in HR-PE pts. Furthermore, it showed a significant interaction with the prognostic impact of reperfusion in early and late cardiovascular outcomes.

CO 97. COMPARISON OF RISK SCORES CALCULATORS IN PATIENTS NEWLY DIAGNOSED WITH PULMONARY ARTERIAL HYPERTENSION

Bárbara Ferreira, Filipa Ferreira, Sofia Alegria, Débora Repolho, Ana Rita Pereira, João Grade Santos, Alexandra Briosa, Mariana Martinho, Ana Marques, Daniel Sebaiti, Ana Francisco, Otília Simões, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Pulmonary arterial hypertension (PAH) is a chronic, progressive, and incurable disease with significant morbidity and mortality. Comprehensive and accurate risk prediction is essential to make individualized treatment decisions and optimizing outcomes in PAH usually with multiparametric scores. The ESC/ERS risk stratification table is simple to approach. However, often patients have variables that fall into different risk categories at the same time point, limiting its "real-world" applicability. FPHN, COMPERA and REVEAL are multiparametric tools validated for risk stratification.
Objectives: To better understand risk status determination in our PAH population and compare different risk score calculators.
Methods: Retrospective longitudinal study that included all patients with group I pulmonary hypertension (PAH). Uncorrected complex congenital heart disease and Eisenmenger physiology were excluded. Baseline data were collected to calculate patient risk using COMPERA, FPHN and REVEAL tools. Follow-up adverse events were registered and included parenteric prostanoid therapy, referral for lung transplant and death.
Results: The cohort comprised 67 patients (70% female, mean age at diagnosis 48 ± 17). Baseline characteristics: WHO Functional class I/II -28.4%, III-56.7% and IV-14.9%; 6-min walk distance 395 ± 125 m, cardiac index 2.26 ± 0.61, mean PVR 11.83 WoodsU. Using FPHN, COMPERA and REVEAL scores respectively, patients at low risk were 4.8%, 24% and 33%, at intermediate risk were 15.9%, 60% and 35% and at high-risk were 79.4%, 16% and 31%. There was a slight agreement between the 3 scores (kappa value 0.125, p = 0.034). FPHN overestimated the risk compared to other scores. With an average follow-up of 5 years 26 patients died (mortality 36%). The Kaplan-Meier survival estimates (Figure) show that the REVEAL score provided better characterization of the risk of adverse events than either COMPERA or FPHN.
Conclusions: REVEAL score was the best risk stratification tool to identify survival without adverse events in our patients with pulmonary arterial hypertension. COMPERA could also identify patients at risk. FPHN overestimated risk and had no discriminative power to risk stratification.

Sábado, 01 Maio de 2021 | 15H00-16H00

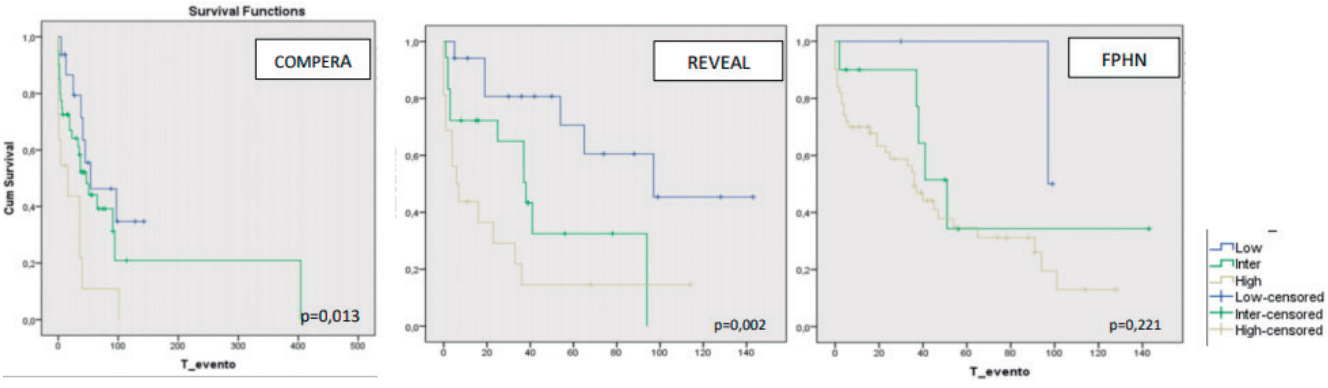
Sala Virtual 2 | CO 20 - Imagem na IC e Dç Coronária

CO 102. TEMPORAL CHARACTERIZATION OF VENTRICULAR FUNCTION AND DEFORMATION AFTER TAKOTSUBO SYNDROME USING CARDIOVASCULAR MAGENTIC RESONANCE IMAGING

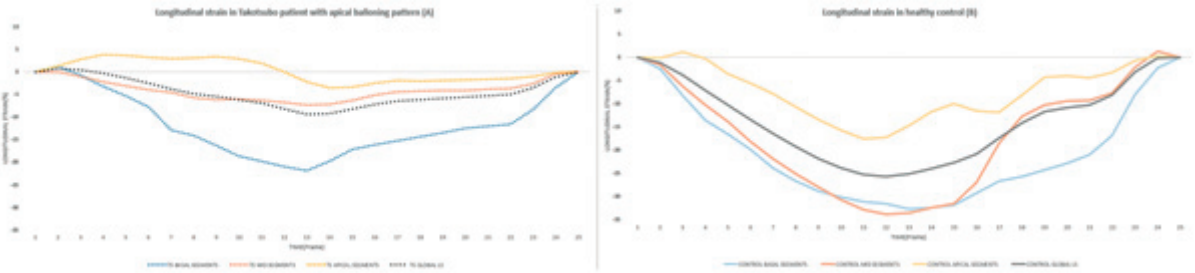
Carla Marques Pires, Rita Morais Passos, Paulo Medeiros, Cátia Oliveira, Rui Flores, Fernando Mané, Rodrigo Silva, Isabel Campos, Nuno Antunes, Catarina Vieira, Sandro Queirós, Vítor Hugo Pereira

Hospital de Braga.

Introduction: The time course of ventricular recovery in Takotsubo Syndrome (TS) patients (pts) is still not well characterized. Quantification of myocardial deformation using Cardiovascular Magnetic Resonance Feature-Tracking (CMR-FT) may be a useful method to better characterize ventricular recovery during TS.
Objectives: To assess the time course of ventricular function using CMR-FT myocardial strain in patients (pts) with an episode of TS.
Methods: We performed a single-center, retrospective cohort study including 130 pts admitted with TS over a 10-year period. From this cohort, 39 (30%) pts were selected and age and sex-matched with 16 healthy controls for a comparative analysis of myocardial strain using CMR-FT. TS pts were divided in 3 homogeneous subgroups according to the time from index-event and the CMR acquisition: Group 1(G1): < 8 days; Group 2(G2): 8 to 30 days; Group 3 (G3): > 30 days. One operator blinded for the study group performed the analysis. Left ventricle (LV) radial strain (RS), longitudinal strain (LS) and right ventricle (RV) LS were quantified.
Results: The mean age of TS group was 66 years and 90% were female. The median ejection fraction (EF) at admission was 38%; 82% displayed an apical ballooning (AB) pattern. Around 19% had at least 1 in-hospital complication and 1.5% died during hospitalization. A significant increase use of CMR was observed over the years (p = 0.001). Myocardial deformation analysis showed



CO 97 Figure



CO 102 Figure

a significant group interaction for LV LS and RS. Specifically, the global values of G1 LV LS and RS were significantly decreased when compared with G3 (LS: -15 vs -20%; p = 0.002; RS: 40 vs 61%; p < 0.001) and controls (LS: -15 vs -22%; p < 0.001; RS: 40 vs 70; p < 0.001). There were no significant differences in the RV LS across groups.The CMR-quantified EF was significantly decreased in G1 when compared with G3 (52 vs 64%; p < 0.003) and controls (52 vs 64%; p < 0.001). Differences between G1 and G2 were found in LV RS (LS: 40 vs 57%; p < 0.001) and EF (52 vs 62%; p < 0.001). No differences were observed for any parameters between G3 and controls. This study showed that global LV LS (r = -0.6, p < 0.001) and RS (r = 0.7, p < 0.001) had a significant correlation with the CMR-quantified EF. A comparison between the different patterns of TS was also performed (Figure). Pts with AB pattern in G1 displayed lower global RS (p = 0.014), although there were no differences regarding global LS. As expected, in the AB group the reduction in myocardial strain was limited to the apical segments. Despite not being significantly different across groups RV LS was the only CMR-derived predictor of complications during follow-up (OR = 1.17; p = 0.026).
Conclusions: This study revealed that after an episode of TS myocardial function quantified either by EF or CMR-FT strain fully recovers between the 8th and 30th day of the event. RV strain was a predictor of complications during follow-up.

CO 106. MYOCARDITIS DIAGNOSIS BY CMR: WHAT CAN CONFUSE INITIAL DIAGNOSIS?

Isabel Martins Cruz, Ana Neto, Inês Oliveira, Bruno Bragança, Rui Pontes dos Santos, Aurora Andrade

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introduction: Myocardial infarction (MI) with non-obstructive coronary arteries (MINOCA) is a "working diagnosis" with multiple underlying aetiologies and pathogenic mechanisms. Failure to identify the underlying cause may result in inappropriate therapy in these patients. Acute myocarditis is a commonly-encountered cause of myocardial injury and is the most common finding in cardiac magnetic resonance (CMR) imaging studies.
Objectives: Characterize a cohort of pts with myocarditis confirmed by CMR and identify clinically relevant features that led to different presumptive diagnostics.
Methods: Unicentric, retrospective analysis of pts with myocarditis diagnosis who underwent CMR between 1/2013 and 9/2019. Clinical, analytical, ECG, imagiological features and follow-up (FUP) - cardiovascular (CV) events (CVE) and mortality - were analysed. Pts were divided according to presumptive diagnosis before CMR: myocarditis (G1), MINOCA (G2) or other (G3).
Results: Out of the 781 CMR studies evaluated 88 pts had (previous history of or acute) myocarditis (11.3%). 57 pts were female (64.8%); mean age 37.7 ± 14.7 years (y). Time to CMR was 1.7 ± 9 months. Regarding CMR data: mean ejection fraction was 58.4 ± 8.4%, mean LV mass was 68.8 ± 14.1 g. 4 pts (4.6%) had wall motion abnormalities (WMA) and 80 pts (93.0%) had late gadolinium enhancement (LGE). As for affected walls, the most affected was lateral wall (57pts, 59.8%). The majority of pts presented with ST segment elevation (47 pts; 53.4%). According to the initial presumptive diagnosis: G1 had 49 pts (55.7%), G2 had 37 pts (42.0%) and G3 had 2 pts (2.3%). We excluded G3 for the subsequent analysis. G2 pts were older (44.1 ± 14.6y vs G1 32.2 ± 12.8y, p < 0.001). There were no differences concerning time to CMR, LGE and pericardic effusion presence, neither regarding cardiovascular risk factors. G2 had higher presentation with T wave inversion (p = 0.031) and presence of WMA evaluated by echo at admission (p = 0.089). G1 had higher C-reactive protein (CRP) maximum values during hospitalization (77.6 ± 64 mg/dL vs G2 49.4 ± 48.8, p = 0.029). G2 had more CV events at FUP (G1 2.0 vs G2 16.2%, p = 0.017).
Conclusions: In our cohort, 56% of pts were correctly diagnosed from the beginning. They were younger, had higher CRP values and presented less frequently with WMA on initial echo evaluation. G2 pts had more CV events at FUP. Notwithstanding, there were no significant differences regarding CMR features, cardiovascular risk factors nor mortality.

CO 104. THE ROLE OF CARDIAC MAGNETIC RESONANCE IN MINOCA DIAGNOSIS

Francisco Cláudio, Bruno Piçarra, David Neves, Manuel Trinca

Hospital do Espírito Santo, EPE, Évora.

Introduction: Absence of obstructive coronary disease does not imply absence of acute myocardial infarction (AMI). Hence, it can be designated as Myocardial Infarction with Non-obstructive Coronary Arteries (MINOCA). Performing Cardiac Magnetic Resonance (CMR) can be essential for establishing a final diagnosis, according to the presence and pattern of late gadolinium enhancement (LGE).
Objectives: The aim of this study is to evaluate the diagnostic and prognostic impact of CMR in patients with a possible diagnosis of MINOCA.
Methods: A 7-year prospective study, which included all patients proposed to CMR with a presumptive diagnosis of MINOCA due to acute chest pain, troponin raise and absence of angiographically significant coronary disease (luminal stenosis of >50%). All patients performed functional, anatomical evaluation and LGE assessment. We analysed clinical characteristics, electrocardiographic presentation, echocardiographic and invasive coronary angiography results. A presumptive diagnosis was elaborated after invasive coronary angiography and comparison was made with the definitive one after CMR.
Results: A total of 96 patients were included, 50% were male, with a mean age of 48 ± 20 years old. Clinical history of hypertension was observed in 51.0% patients, 35.4% had dyslipidaemia, 7.3% with diabetes, obesity was present in 22.9% of patients and smoking habits in 30.2%. At admission, 44.8% had ST segment elevation, so emergent invasive coronary angiography was performed. The mean highest troponin I was 7.34 ± 9.18 ng/mL. Late gadolinium enhancement was observed in 53 (55.2%) of patients. After CMR realization a final diagnosis of MINOCA was made in only 8 patients (8.4%) and in 51 patients (53.1%) CMR evaluation allowed a diagnosis modification, with impact on patients' management and prognosis. A definitive diagnosis of myocarditis was seen in 46.9% (n = 45) of cases, of Takotsubo's myocardiopathy in 13.5% (n = 13), and hypertrophic cardiomyopathy in 3.1% (n = 3). In 27 (28.1%) of patients, late gadolinium enhancement was not found. This diagnosis adjustment had an impact on treatment in 34.4% (n = 33).
Conclusions: CMR is a pivotal technique on MINOCA patients' management. Our study portrayed the importance of performing CMR, allowing initial diagnosis modification in half of the cases, with important therapeutic in

one third of patients and prognostic implications, related to diagnosis and target treatment adverse effects.

CO 105. ECHOCARDIOGRAPHIC DETERMINATION OF LVEF IN PATIENTS WITH A POOR ACOUSTIC WINDOW

José Lopes de Almeida[1], J. Almeida[2], S. Martinho[1], A. Freitas[1], C. Ferreira[1], J. Rosa[1], G. Campos[1], R. Martins[1], M. Ferreira[1], L. Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra. [2]Faculdade de Ciências e Tecnologias da UC.

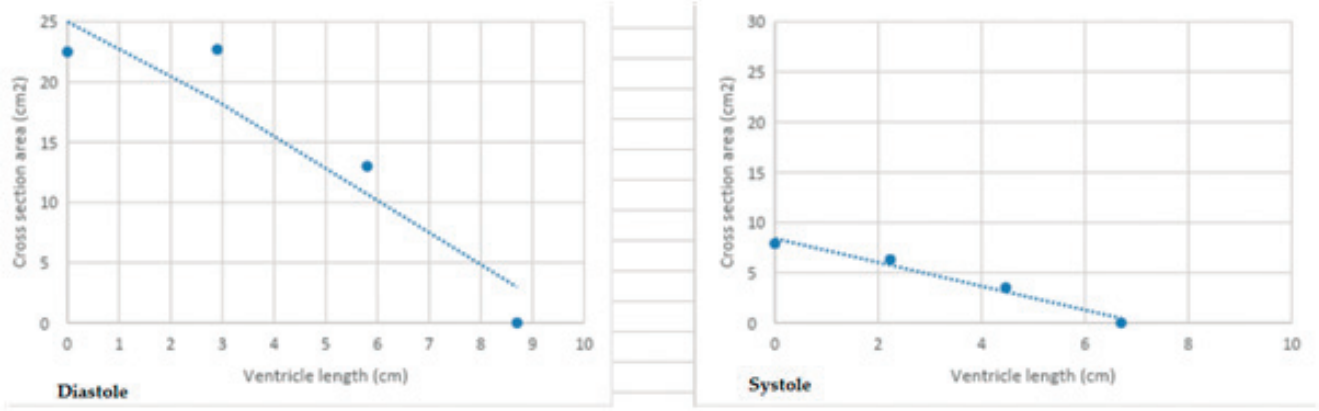
Introduction: Left ventricular ejection fraction (LVEF) is the most commonly used clinical measure of left ventricular systolic function. The Simpson method is the currently recommended 2D method to assess LVEF by expert committee consensus. This method requires tracings of the blood-tissue interface in the apical four- and two-chamber views. However, in several patients, it is not possible to acquire all the classic echocardiographic views, and this is especially true in critically ill patients. We propose a new method of LVEF estimation using information from parasternal or subcostal views, for those patients in which the Simpson method cannot be applied.
Methods: We created a method that estimates LVEF based on systolic and diastolic basal, mid and apical short axis areas and ventricle length, acquired in parasternal or subcostal views. We retrospectively applied our method to 20 patients who had an echocardiogram followed by a cardiac magnetic resonance (cMRI), and compared LVEF calculated between cMRI and echocardiogram. cMRI LVEF was estimated based on Simpson disk summation method using short-axis cine steady-state free precession images. Echocardiogram LVEF was estimated with both the standard method-Simpson method-and the proposed method.
Results: Our population had an average age of 64 (± 12) years and 35% of female patients. 6 patients had no significant cardiac structural disease, 4 patients had coronary heart disease, 4 patients had familiar hypertrophic myocardiopathy, 2 patients had cardiac amyloidosis, 1 patient had an atrial septal defect, 1 patient had cardiac sarcoidosis, 1 patient had dilated familiar cardiomyopathy and 1 patient had acute myocarditis. LVEF calculated through the proposed method showed a significant correlation with LEVF calculated with the Simpson echocardiographic method (R = 0.83, 0.61-0.93, p < 0.01). Both our new method (R = 0.65, 0.28-0.85, p < 0.01) and the Simpson echocardiographic method (R = 0.70, 0.37-0.87, p < 0.01) correlated moderately with LVEF calculated by cMRI, which is in accordance with previous literature.
Conclusions: We show the proof-of-concept of a new method for estimating LVEF by 2D echocardiogram that does not require measurements in the apical views. After validation, this method may become an alternative for estimating LVEF, especially for patients with more challenging acoustic windows where it is not possible to acquire the classic 2D echocardiographic views.

CO 103. FALSE POSITIVE RESULTS ON DOBUTAMINE STRESS ECHOCARDIOGRAPHY: A NEW MARKER OF RISK FOR ISCHEMIC EVENTS

Lisa Maria Ferraz[1], Tiago Costa[2], Ana Faustino[1], Pedro Carvalho[1], Diana Carvalho[1], Adriana Pacheco[1], Jesus Viana[1], Ana Neves[1]

[1]Centro Hospitalar do Baixo Vouga/Hospital Infante D. Pedro, EPE. [2]Universidade de Aveiro.

Introduction: Although dobutamine stress echocardiography (SE) has a high specificity, there is still a subset of patients (P) with false positive tests (FP) and their prognosis remains unclear.
Objectives: To identify the clinical and echocardiographic predictors of FP on SE and to evaluate the prognostic impact of FP on SE.
Methods: Retrospective study of 355 consecutive adult P who underwent SE for ischemia assessment over a one-year period: 134 (37.7%) women, 70.3 ± 0.57 years, body surface area (ASC) 1.85 ± 0.01 cm^2. Demographics, risk factors, clinical and laboratorial parameters and SE variables were evaluated. A FP result was defined as a positive SE for ischemia in the absence of ≥ 50% coronary artery (CA) lesion in a major artery of the corresponding coronary territory on subsequent angiography. P were divided into 2 groups regarding the presence (FP+) or the absence (FP0: 15.5% true positives, 79.7% true negatives, 0.3% false negatives) of a FP result on SE and a comparative analysis was performed in order to characterize the groups and identify potential predictors of FP results. P were followed for 2 years to assess acute myocardial infarction (AMI), hospitalization for acute heart failure (HF) and mortality (M).
Results: The FP rate was 4.5% (16P). Comparing to F0, P in group FP+ were younger (65.1 ± 2.4 vs 70.5 ± 0.6 years; p = 0.045), baseline wall motion abnormalities were more frequent (75.0% vs 41.6%; p = 0.009), had higher mean blood pressure values at rest (99.3 ± 5.4 vs 82.0 ± 1.3 mmHg; p = 0.004) and at peak stage (140.3 ± 5.6 vs 102.8 ± 2.3 mmHg; p < 0.001) and more often hypertensive response (37.5% vs 7.1%; p < 0.001). There were no significant differences regarding previous CA disease, medication or complete left bundle branch block. By multivariate analysis, only mean blood pressure values at rest (OR 0.01; 95%CI 0.005-0.02; p = 0.003) and at peak stage (OR 0.02; 95%CI 0.000-0.004; p = 0.003) were independent predictors of FP. During follow-up was observed: AMI (FP+: 12.5% vs FP0: 1.8%, p = 0.046), HF (FP+: 6.3% vs FP0: 11.5%, p = 0.44) and M (FP+: 6.3% vs FP0: 6.2%, p = 0.65). After adjustment for age, sex and comorbidities, there were no differences between the groups regarding HF (p = 0.45) and M (p = 0.77), but the group FP+ maintained a higher rate of AMI (OR 0.21; 95%CI 0.065-0.354; p = 0.005).
Conclusions: A FP result on SE is associated with higher mean blood pressure values during the test and with higher rates of AMI during follow-up. This result on SE should therefore be faced as a risk marker for ischemic events and can identify P that may benefit from aggressive risk factor control and careful clinical follow-up.



CO 105 Figure

Domingo, 02 Maio de 2021 | 10H30-11H45

Sala Virtual 2 | CO 23 - Dispositivos

CO 123. HOW TO PREDICT MORTALITY IN PATIENTS UNDERGOING ICD IMPLANTATION-IS CREATININE THE NEW AGE?

Mafalda Carrington[1], Pedro Silvério António[2], Sara Couto Pereira[2], Joana Brito[2], Afonso Nunes-Ferreira[2], Rafael Santos[2], Igor Santos[2], Ivo Marcos[2], Lénia Coelho[2], Fausto J. Pinto[2], João de Sousa[2], Pedro Marques[2]

[1]Hospital do Espírito Santo, EPE, Évora. [2]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria.

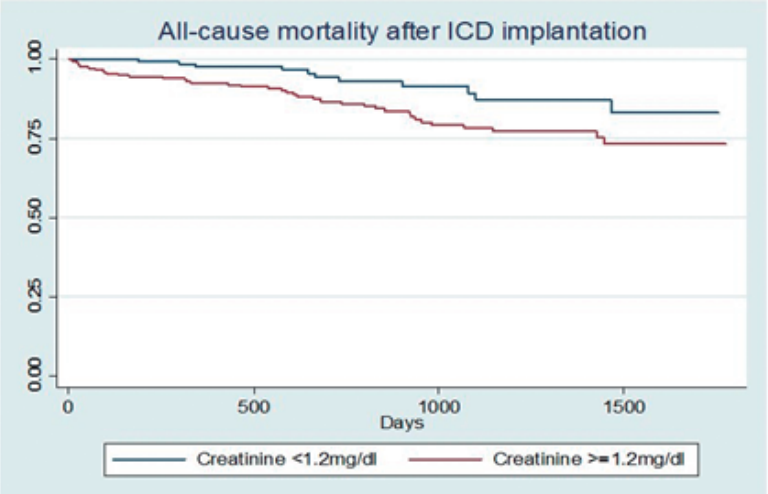
Introduction: Implantable Cardioverter Defibrillators (ICD) may be indicated in patients with ischaemic (i-CMP) or dilated noni-CMP with low ejection fraction (EF) and in selected patients with other CMP and channelopathies. ICDs have been shown to reduce overall mortality comparing to medical therapy and they may be implanted for secondary prevention of sudden cardiac death (SCD) or for primary prevention. ICD therapy is not recommended in patients who do not have a reasonable expectation of survival for at least 1 year, although specific recommendations regarding clinical or functional status evaluation are lacking.

Objectives: To identify predictors of all-cause mortality in patients who implanted an ICD.

Methods: Prospective single-center study of patients who implanted ICD between 2015 and 2019. Clinical characteristics were evaluated at baseline and mortality was assessed using the national registry of citizens. We performed univariate and multivariate analysis to compare clinical characteristics of patients who died and who survived using the Cox regression and Kaplan-Meier methods. For the predictor creatinine levels, we assessed the discrimination power and defined the best cut-off using the area under the ROC curve (AUC) method.

Results: From 2015-2019, 414 ICDs were implanted (81% male, 62 ± 12 years-old), and 50(13%) of the patients died after a median follow-up of 23 [11-41] months. Patients who died during the follow-up were older (67 ± 9 vs 61 ± 12,p = 0.002), had more diabetes (48% vs 33%,p = 0.033) and a higher creatinine level (1.23 [0.84-1.86] vs 1.00 [0.84-1.22], p < 0.001). The remaining comorbidities were similar between both groups (Figure). Patients who died had more frequently an ICD implanted after a complication associated with a previous device or as a pacemaker upgrade (6% vs 2%, p = 0.030). They also had a higher frequency of i-CMP (82% vs 56%, p = 0.002) and of EF ≤ 50% (96% vs 82%, p = 0.040). The best cut-off value of creatinine to predict mortality with a sensitivity of 65% and a specificity of 72% was 1.2 mg/dl (AUC 0.650; 95%CI 0.53-0.77). After adjusting for diabetes, i-CMP, EF≤ 50% and upgrade/re-implantation after complication, we found that age (HR1.033; 95%CI 1.00-1.06, p = 0.041) and creatinine ≥ 1.2 mg/dl (HR

	Died (n=50)	Survived (n=348)	HR (CI95%)	p-value
Basal clinical characteristics				
Male gender, n(%)	41 (82%)	279 (80%)	1.057 (0.51-2.18)	0.881
Age, mean ± standard deviation	67 ± 9	61 ± 12	**1.043 (1.02-1.07)**	**0.002**
NYHA class ≥II, n(%)	22 (47%)	124 (42%)	1.117 (0.63-1.98)	0.706
Creatinine, median[inter-quartile range]	1.23[0.84-1.86]	1.00[0.84-1.22]	**1.452 (1.20-1.76)**	**<0.001**
Comorbidities				
Atrial fibrillation, n(%)	11 (22%)	72 (21%)	0.919 (0.47-1.80)	0.806
Hypertension, n(%)	43 (86%)	243 (73%)	1.870 (0.84-4.16)	0.125
Diabetes mellitus, n(%)	24 (48%)	112 (33%)	**1.831 (1.05-3.19)**	**0.033**
Dislipidemia, n(%)	37 (74%)	196 (59%)	1.731 (0.92-3.26)	0.089
Smoker or ex-smoker, n(%)	25 (50%)	163 (49%)	0.994 (0.57-1.73)	0.984
Ablation of atrial fibrillation or flutter or ventricular tachycardia, n(%)	1 (2%)	38 (11%)	0.151 (0.02-1.09)	0.061
ICD indication criteria				
Ischaemic CMP, n(%)	41 (82%)	196 (56%)	**3.113 (1.51-6.41)**	**0.002**
Dilated non-iCMP, n(%)	8 (16%)	94 (27%)	0.515 (0.24-1.10)	0.085
Other CMP or channalopathies, n(%)	1 (2%)	58 (17%)	**0.130 (0.02-0.94)**	**0.043**
Secondary prevention, n(%)	19 (38%)	114 (33%)	1.210 (0.68-2.14)	0.513
Left ventricle EF ≤50%, n(%)	48 (96%)	285 (82%)	**4.389 (1.07-18.06)**	**0.040**
ICD re-implantation after complication/ pacemaker upgrade, n(%)	3 (6%)	7 (2%)	**3.682 (1.14-11.94)**	**0.030**
Need for device surgical revision during follow-up, n(%)	3 (6%)	18 (5%)	1.233 (0.38-3.97)	0.725



2.134; 95%CI 1.09-4.19, p = 0.028) were independent predictors of all-cause mortality (Figure).
Conclusions: In our cohort of patients who underwent ICD implantation for primary or secondary SCD prevention, the all-cause mortality over a median follow-up period of 23 [11-41] months was 13%. We found that in addition to age, a baseline creatinine level ≥ 1.2 mg/dl increases by 2-fold mortality in patients who undergo ICD implantation. Decisions regarding ICD candidacy should not be based on age alone but should also consider creatinine factor that predisposes to mortality despite defibrillator implantation.

CO 122. COULD QRS DURATION ADJUSTED TO BMI AND BSA PREDICT CARDIAC RESYNCHRONIZATION THERAPY RESPONSE?

Beatriz Silva [1], Tiago Rodrigues[2], Nelson Cunha[2], Pedro Silvério António[2], Sara Couto Pereira[2], Pedro Alves da Silva[2], Joana Brito[2], Margarida Martins[2], Catarina Oliveira[2], Beatriz Garcia[2], Afonso Ferreira[2], Fausto J. Pinto[2], João de Sousa[2], Pedro Marques[2]

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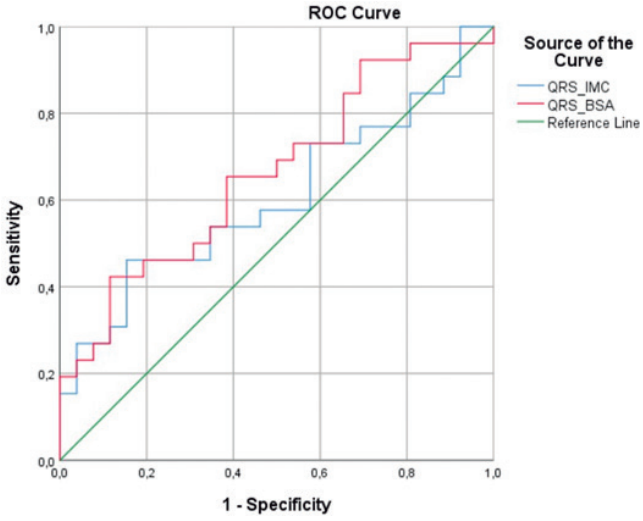
Introduction: Current Guidelines established a class I indication for Cardiac Resynchronization Therapy (CRT) implantation in symptomatic heart failure patients with QRS duration greater than 150 ms and complete left branch block. It is known that QRS duration is influenced by weight and height, but it remains unclear if the adjustment of the QRS to these parameters can help to better select patients who respond to CRT.
Objectives: To analyze if the QRS adjusted to body mass index (BMI) and body surface area (BSA) could predict CRT response in patients with QRS < 160 ms.
Methods: Single-centre retrospective study of consecutive patients with QRS < 160 ms submitted to CRT implantation between 2016 and 2019. A total of 53 CRT recipients were analyzed to assess response to CRT at 12 months of implantation based on echocardiographic criteria (responders defined as: increase of ejection fraction ≥ 10% or left ventricle end-systolic volume reduction ≥ 15%). Baseline QRS duration was adjusted to BMI (QRS/BMI) and BSA (QRS/BSA) to create and compare the best QRS index to predict CRT response, compared to non-adjusted QRS. The results were obtained using the Mann-Whitney test and linear regression. The best cut-off for QRS/IMC and QRS/BSA index was defined using the area under the ROC curve (AUC). The significance between AUC was calculated using NCSS software.
Results: Fifty-three patients were included (72% males, mean age 72.1 ± 9.8 years), of which 26 patients (49%) responded to CRT. The mean QRS/BSA index was higher in CRT responders compared to non-responders (82.56 ± 2.74 versus 75.34 ± 1.70, p = 0.04). There was a positive linear correlation between QRS/BSA index and response to CRT (r = 0.302, p = 0.03). QRS/BSA index of 64.32 was the best cut-off to predict CRT response (AUC 0.66, sensitivity 96%, specificity 85%, p = 0.044). Regarding the QRS/IMC index, there was no difference between CRT responders and non-responders (5.82 ± 0.25 and 5.29 ± 0.12, p = 0.194). The best QRS/IMC cut-off to predict CRT response was 4.34 (AUC 0.61, sensitivity 96%, specificity 85%, p = 0.194). The difference between AUC of QRS/BSA and QRS/IMC index was statistically significant (p = 0.04).



Conclusions: Indexing the QRS to the BSA improves patient selection for CRT implantation and this index should be considered as a novel indicator to predict the response to CRT. There is still need further studies to validate this data.

CO 119. WHAT IS THE MORTALITY IMPACT OF SUBCUTANEOUS IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR INAPPROPRIATE SHOCKS?

Luís Resendes de Oliveira[1], Diogo Cavaco[2], Gustavo Rodrigues[2], Daniel Matos[2], Maria Salomé Carvalho[2], João Carmo[2], Pedro Galvão Santos[2], Francisco Costa[2], Pedro Carmo[2], Isabel Santos[2], Francisco Morgado[2], Miguel Mendes[2], Pedro Adragão[2]

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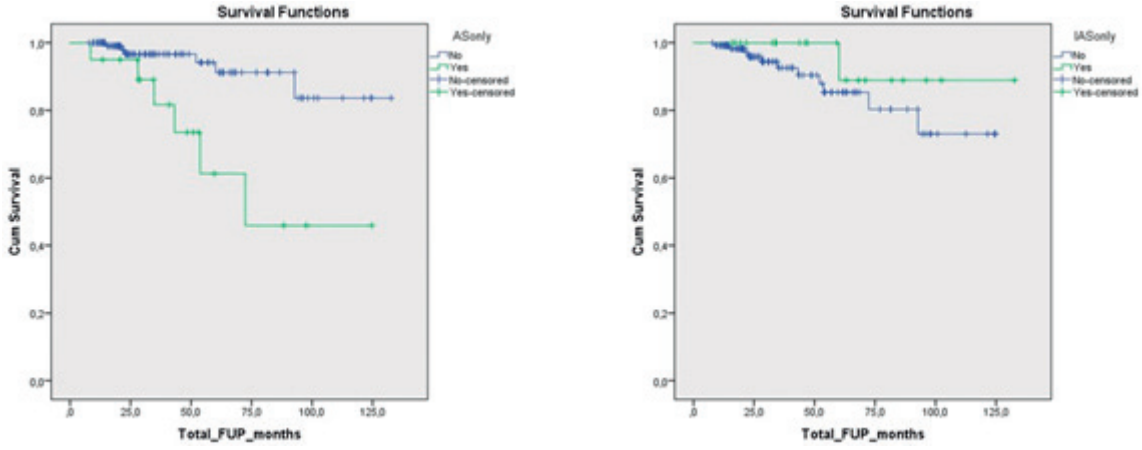
Introduction: Previous studies have shown an adverse prognosis for patients with transvenous implantable cardioverter-defibrillators (ICD) who receive both appropriate and inappropriate shocks. There is a paucity of data regarding the prognosis of inappropriate shocks in patients with a subcutaneous ICD (S-ICD).



CO 119 Figure

Objectives: To assess and characterize S-ICD inappropriate (IAS) and appropriate shocks (AS) and their impact on mortality.
Methods: Single center observational registry of 162 consecutive patients who underwent S-ICD implantation for primary and secondary prevention between November 2009 and September 2020. Only follow-up data of at least 6 months was analysed to identify predictors of both IAS and AS and their mortality impact.
Results: A total of 144 patients were included in the analysis. Mean age was 42.2 ± 16.6 years and 75% of the patients were male. One hundred and four patients (72.2%) implanted the S-ICD in primary prevention. The most common etiology was ischemic cardiomyopathy (22.9%) followed by hypertrophic cardiomyopathy (18.8%) and dilated idiopathic cardiomyopathy (14.6%). During a mean follow-up of 42.3 ± 29.9 months a total of 48 patients (33.3%) experienced at least one S-ICD shock. Twenty-nine (20.1%) patients received AS due to VT/VF and 31 patients (21.5%) received IAS. Eighteen (58.1%) of the IAS were due to oversensing/noise/discrimination errors and the remaining due to supraventricular tachycardia. Overall, patients with AS (HR 4.93, 95%CI 1.58-15.36, p = 0.006) and higher number of total AS (HR 1.10, 95%CI 1.00-1.20, p = 0.044) were associated with higher mortality during follow-up. S-ICD IAS therapy did not affect overall mortality (HR 1.71, 95%CI 0.21-14.0, p = 0.616).
Conclusions: In our sample of patients with S-ICD, receiving an IAS, in contrast to AS, did not correlate with a worse prognosis. Larger studies are needed to confirm this hypothesis and to explain these findings.

CO 121. HEART FAILURE HOSPITALIZATION AND SURVIVAL AFTER CARDIAC RESYNCHRONIZATION THERAPY IN ELDERLY POPULATION

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Centro Hospitalar do Porto, EPE/Hospital Geral de Santo António.

Introduction: The benefits of cardiac resynchronization therapy (CRT) in patients with heart failure (HF) with reduced ejection fraction are well known. However, the elderly population was not well represented in previous studies. We aimed to compare the clinical improvement, incidence of HF hospitalization and survival of patients with ≥ 75 years submitted to CRT with those with < 75 years.
Methods: We retrospectively studied consecutive patients with HF, left ventricular ejection fraction (LVEF) ≤ 35%, New York Heart Association (NYHA) functional class ≥ II and QRS ≥ 130 milliseconds submitted to CRT at a tertiary hospital between January 2002 and March 2016. Clinical and outcome data were retrieved by review of the patient's records.
Results: Of 264 patients (69 ± 10 years, 67% male), 33% had ≥ 75 years at the time of CRT procedure. Aetiology was ischaemic in 43% of individuals. Median LVEF before CRT was 28% (23-29). Patients with ≥ 75 years had higher prevalence of hypertension (78% versus 65%, p = 0.03) and they are more frequently in NYHA class ≥ III before CRT (89% versus 78%, p = 0.02). They were also less likely to be on betablocker (67% versus 82%, p = 0.03). Implantation of CRT-defibrillator was lower in the older group (32% versus 71%, p < 0.001). During a median follow-up of 36 (16-74) months, all-cause death was 34%, higher in patients with ≥ 75 years (44% versus 28%, p = 0.008). Incidence of worsening HF requiring hospitalization was 19%. Comparing to baseline, improvement of NYHA class after CRT was more common in the older group (85% versus 66%, p = 0.001) and NYHA class ≥ III was less frequent (10% versus 22%, p = 0.01). Mean LVEF during follow-up was 35% (11), a mean improvement of 8% (11) comparing to the baseline, without significant difference between groups. Improvement of quality life after CRT was referred in 78% of patients, similar in both groups. Biventricular pacing percentage was 99% (97-100). In multivariate analysis, age ≥ 75 years was not an independent predictor of all-cause death (HR 1.7, 95%CI 0.9-3.3, p = 0.08) nor HF hospitalization (HR 0.9, 95%CI 0.4-2.0, p = 0.88).
Conclusions: In our cohort, despite patients with ≥ 75 years had higher mortality rate, it was not identified as an independent predictor of death nor HF hospitalization. In fact, LVEF increased as younger patients and their functional class improved even more.

CO 120. OUTCOMES AND PREDICTORS OF CLINICAL RESPONSE AFTER UPGRADE TO RESYNCHRONIZATION THERAPY

Mariana S. Brandão[1], João Gonçalves Almeida[1], Paulo Fonseca[1], Joel Monteiro[2], Filipa Rosas[1], Elisabeth Santos[1], José Ribeiro[1], Marco Oliveira[1], Helena Gonçalves[1], João Primo[1], Ricardo Fontes-Carvalho[1]

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Introduction: Upgrade to resynchronization therapy (CRT) is common practice in Europe. However, patient selection remains a challenge. Data regarding predictors of response to upgrade is currently lacking.
Objectives: To identify predictors of clinical response after upgrade to CRT.
Methods: Single-center retrospective study of consecutive patients submitted to upgrade to CRT (2007-2018). Patients underwent clinical and echocardiographic (echo) evaluation at baseline, 6-months and 1-year. Major adverse cardiac events (MACE) included hospitalization for heart failure (HF) or all-cause mortality. Clinical response was defined as New York Heart Association (NYHA) class improvement without MACE in the 1st year of follow-up (FU). Left ventricle end-systolic volume reduction of >15% designated echo response. Multivariate logistic regression was performed to identify predictors of clinical response to CRT.
Results: Fifty-six patients submitted to upgrade to CRT (80.4% male, mean age 70.0 ± 9.6 years) were included; 43 patients (78.2%) previously had a pacemaker and 12 (21.8%) had a defibrillator device. Most patients had non-ischemic HF (67.9%), with a mean baseline left ventricle (LV) ejection fraction of 27.9 ± 6.4%. Indications for upgrade were mainly pacemaker dependency or pacing-induced LV dysfunction (76.6%) and de novo left bundle branch block (23.4%). Thirty-one (59.3%) patients were clinical responders. MACE occurred in 37.5% of patients; 28.6% were hospitalized for HF and 13% died during the 1st year of FU. Clinical responders had a lower rate of atrial fibrillation (AF) (46.9% vs. 53.1%, p = .025) and a higher rate of pacemaker rhythm prior to upgrade (80.6% vs 47.6%, p = .013). Among responders, the previous device was more frequently a pacemaker (87.5% vs 61.9%, p = .029), and the new device a CRT-P (81.2% vs 54.5%, p = .035). HF etiology did not differ between responders and non-responders. Multivariate analysis identified absence of AF (odds ratio [OR] 4.4, 95% confidence interval [CI] 1.1-17.6, p = .037), CRT-P (OR 5.7, 95%CI 1.3-25.8, p = .022) and quadripolar lead implant (OR 3.8, 95%CI 1.3-25.8, p = .024) as predictors of clinical response in upgraded patients.
Conclusions: In this cohort, absence of AF, implantation of CRT-P and use of a quadripolar lead predicted clinical response to upgrade to CRT. Larger studies are warranted to tailor selection of patients for upgrade procedures.

CO 124. PREDICTORS OF VENTRICULAR ARRYTHMIAS AND MORTALITY AFTER IMPLANTATION OF PRIMARY PREVENTION ANTITACHYCARDIA DEVICES

Isabel Gonçalves Machado Cardoso, João Pedro Reis, Luísa Moura Branco, Pedro Rio, Ana Galrinho, André Monteiro, Ana Lousinha, Bruno Valente, Pedro Silva Cunha, Mário Oliveira, Rui Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Patients (pts) with reduced left ventricular (LV) systolic function have high risk of sudden cardiac death and benefit from implantable cardioverter-defibrillators (ICDs/CRT-Ds). However, the risk for arrhythmic events and device therapies is extremely heterogeneous in this population, so more accurate tools for risk stratification are required.
Objectives: To assess predictors of mortality and arrhythmic events in pts receiving primary prevention ICDs/CRTs.
Methods: Retrospective analysis of 150 pts submitted to primary prevention ICD/CRT-D implantation with remote monitoring between 2014-2018. Demographic, clinical and echocardiographic data from implantation and follow-up period were retrieved. Arrhythmic events and device therapies were retrieved from remote monitoring and clinic visits. Univariate analysis was performed followed by a multivariate Cox analysis to evaluate predictors of events. p < 0.05 were considered significant.

Results: 150 pts, 80.7% male, with a mean age of 64.30 ± 12.9 years (Y) and a mean follow-up (FU) time of 38 ± 15 months. 66% of pts implanted an ICD. 52.0% of pts presented with an ischemic cardiomyopathy and 41.3% had atrial fibrillation. 35.3% had chronic kidney disease (GFR< 60 mL/min) and 24.0% were diabetic. Mean BNP value of 449.6 ± 631.3 pg/mL and mean peak VO2 of 15.3 mL/kg/min. Mean LV ejection fraction (LVEF) during FU of 35.9 ± 12.1% and a mean average global longitudinal strain (GLS) of -8.7 ± 5.5%. 63 pts (42.0%) suffered a ventricular arrhythmia, mostly non-sustained ventricular tachycardia, of which 47.6% received appropriate therapies. Mortality rate of 13.3% during follow-up (20 pts). Baseline diabetes (p = 0.040) and post-procedural pulmonary artery systolic pressure (PASP) (p = 0.002) were independent predictors of overall mortality in the follow-up. Male gender (p = 0.041), baseline diabetes (p = 0.011) and atrial fibrillation (p = 0.038) were associated with ventricular events. In patients with CRT-D, a percentage of biventricular pacing superior to 95% was found to be protective against ventricular arrhythmias. Interestingly despite being associated with a higher overall mortality (p = 0.028), a reduced LVEF wasn't related to the arrhythmic burden of our population, neither the GLS nor the LV mechanical dispersion were predictors of ventricular arrhythmias.
Conclusions: Baseline diabetes and PASP were independent predictors of mortality in our population of ICD/CRT-D pts implanted in primary prevention setting. An increased percentage of biventricular pacing was associated to improved clinical outcomes in patients receiving cardiac resynchronization therapy. Identification of predictors of events in this population can help individualize its management.

Domingo, 02 Maio de 2021 | 15H15-16H30

Sala Virtual 1 | CO 21 - Miocardiopatias

CO 107. CORONARY MICROVASCULAR DYSFUNCTION, MYOCARDIAL FIBROSIS AND IMPAIRED MYOCARDIAL DEFORMATION ARE ASSOCIATED WITH SUPRAVENTRICULAR AND VENTRICULAR ARRHYTHMIC EVENTS IN HYPERTROPHIC CARDIOMYOPATHY

Silvia Aguiar Rosa[1], Boban Thomas[2], António Fiarresga[1], Ana Luísa Papoila[3], Marta Alves[3], Inês Cruz[4], Ricardo Pereira[5], Gonçalo Branco[5], Luis Baquero[5], Rui Cruz Ferreira[1], Miguel Mota Carmo[3], Luís Rocha Lopes[6]

[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [2]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário. [3]Nova Medical School. [4]Hospital Garcia de Orta, EPE. [5]Hospital da Cruz Vermelha. [6]St Bartholomew's Hospital/Reino Unido.

Introduction: Coronary microvascular dysfunction (CMD) and fibrosis are two important pathophysiological features in hypertrophic cardiomyopathy (HCM) and have prognostic relevance.
Objectives: To assess the impact of CMD and fibrosis on arrhythmic events in HCM patients (P).
Methods: The study prospectively enrolled HCM P without obstructive epicardial coronary artery disease, who underwent stress cardiovascular magnetic resonance (CMR). CMD was assessed by perfusion imaging. The myocardium was divided into 32 subsegments (16 AHA segments subdivided into an endocardial and epicardial layer, excluding segment 17) and the ischemic burden was calculated as the number of involved subsegments, assigning 3% of myocardium to each subsegment. Fibrosis was assessed by native T1, extracellular volume (ECV) and LGE. Three-dimensional longitudinal, circumferential and radial strains were analysed. Atrial fibrillation/flutter (AF/AFL) and non-sustained ventricular tachycardia (NSVT) were documented by 12 lead electrocardiogram and 24 hours Holter monitoring. Mixed effects regression models were used and a level of significance $\alpha = 0.100$ was considered.
Results: 75P, 47 (62.7%) male, age 54.6 ± 14.8 years. 24 P (32.0%) had obstructive HCM, maximal wall thickness (MWT) was 20.1 ± 4.6 mm, left ventricular (LV) mass 97.2 ± 30.5 g/m², LV ejection fraction 71.6 ± 8.3%, ischemic burden 22.5 ± 16.0% of LV. For each unit increased in ischemia (%of LV), there was an increase of 4% in the odds of AF/AFL. Impaired circumferential strain was also associated with AF/AFL (Table). For each unit increased in LGE (% of LV mass), there was an increase of 9.6% in the odds of NSVT. Non obstructive HCM and better radial strain were protective factors for NSVT. There was no relationship between ischemia and NSVT (Table).

Multivariable logistic regression for factors related with arrhythmic events

	OR	95% confidence interval	p-value
AF/AFL			
Ischemia (% of LV)	1.040	1.002 to 1.080	0.039
Circumferential strain (%)	1.282	1.069 to 1.538	0.007
NSVT			
LGE (% of LV)	1.096	1.004 to 1.197	0.041
Non obstructive HCM	0.196	0.052 to 0.733	0.015
Radial strain (%)	0.924	0.855 to 1.000	0.049

Conclusions: CMD and consequent ischemia, myocardial fibrosis and impaired myocardial deformation were associated with arrhythmic events in HCM.

CO 109. INDEX OF MICROCIRCULATORY RESISTANCE IN THE ASSESSMENT OF CORONARY MICROVASCULAR DYSFUNCTION IN HYPERTROPHIC CARDIOMYOPATHY

Silvia Aguiar Rosa[1], Miguel Mota Carmo[2], Luís Rocha Lopes[3], Eunice Oliveira[1], Boban Thomas[4], Luis Baquero[4], Rui Cruz Ferreira[1], António Fiarresga[1]

[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [2]Nova Medical School. [3]St Bartholomew's Hospital/Reino Unido. [4]Hospital da Cruz Vermelha.

Introduction: Coronary microvascular dysfunction (CMD) constitutes one of the most important pathophysiological features in hypertrophic cardiomyopathy (HCM) and may lead to recurrent ischemia, cardiomyocyte death and myocardial fibrosis. The index of microcirculatory resistance (IMR) constitutes an invasive method to evaluate the coronary microcirculation.
Objectives: a) To evaluate CMD in HCM by IMR and coronary flow reserve (CFR), complemented with the detection of perfusion defects by stress cardiovascular magnetic resonance (CMR); b) to investigate the relationship between CMD and myocardial fibrosis.
Methods: Prospective study. HCM adult patients without epicardial coronary artery disease underwent cardiac catheterization for the assessment of CMD by IMR (normal cut off value ≤ 22.0) and coronary flow reserve (CFR)(normal cut off value ≥ 2). Cardiovascular magnetic resonance (CMR) was performed to assess the ischemic burden by perfusion imaging during regadenoson-induced hyperemia, and the extent of myocardial fibrosis was assessed by late gadolinium enhancement (LGE), native T1 mapping and extracellular volume (ECV).
Results: Fourteen patients with a mean age of 62.8 ± 6.2 years, 8 (57.1%) males, 9 (64.3%) of whom had obstructive HCM. In the overall population, Pd was 68.8 ± 18.8 mmHg, T_{mnRest} 0.61 ± 0.25s, $T_{mnHyper}$ 0.32 ± 0.10s, CFR 1.93 ± 0.69 and IMR was 21.4 ± 6.3U. Among the 4 patients with an IMR >22.0, all had non-obstructive HCM and 2 had angina. Among the 10 patients with an IMR ≤ 22, 1 had non-obstructive HCM, 6 patients complained of angina. CFR< 2 was reported in 8 patients (57%). Concordance between IMR and CFR (both normal or both abnormal) was verified in 6 patients (43%). All patients except one, due to claustrophobia, underwent CMR. Stress CMR demonstrated perfusion defects in 12 out of 13 patients (92%), with an ischemic burden between 3 and 54% of LV. Among the 4 patients with IMR > 22.0, perfusion defects were found in 2 of the 3 patients who underwent stress CMR. In the overall sample, ECV was increased in 5 patients (36%) (normal ECV values 25 ± 3%). Increased

ECV (> 28%) was documented in 2 of the patients with IMR > 22 patients and in 3 of the patients with IMR ≤ 22.0.LGE was found in all patients with a range between 3.4 to 39.8% of LV mass. LGE was >15% in 2 of the patients with IMR > 22 and in 4 with IMR≤ 22.0.
Conclusions: IMR detected CMD in a significant proportion of HCM patients. IMR has the potential to become a useful tool for microcirculation assessment in HCM patients.

CO 108. CORONARY MICROVASCULAR DYSFUNCTION IS ASSOCIATED WITH TISSUE CHANGES AND MYOCARDIAL DEFORMATION IMPAIRMENT IN HYPERTROPHIC CARDIOMYOPATHY-A MAGNETIC RESONANCE IMAGING STUDY

Silvia Aguiar Rosa[1], Boban Thomas[2], António Fiarresga[1], Ana Luísa Papoila[3], Marta Alves[3], Inês Cruz[4], Ricardo Pereira[5], Gonçalo Branco[5], Luis Baquero[5], Rui Cruz Ferreira[1], Miguel Mota Carmo[3], Luís Rocha Lopes[6]

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Introduction: Fibrosis and impairment of left ventricular (LV) performance are associated with worse prognosis in hypertrophic cardiomyopathy (HCM).
Objectives: a) To assess the role of coronary microvascular dysfunction (CMD) in promoting edema and fibrosis in HCM; b) to evaluate the impact of CMD on LV myocardial deformation in HCM.
Methods: This prospective study enrolled patients (P) with HCM without obstructive epicardial coronary artery disease. Each patient underwent cardiovascular magnetic resonance (CMR), including parametric mapping, perfusion imaging during regadenoson-induced hyperemia, late gadolinium enhancement (LGE) and three-dimensional longitudinal, circumferential and radial strains analysis. CMD was assessed by perfusion imaging. The myocardium was divided into 32 subsegments (16 AHA segments subdivided into an endocardial and epicardial layer, excluding segment 17) and the ischemic burden was calculated as the number of involved subsegments, assigning 3% of myocardium to each subsegment. Myocardial fibrosis was assessed by native T1, extracellular volume (ECV) and LGE. T2 was used to evaluate edema. Linear regression models were used. A level of significance $\alpha = 0.05$ was used, although p-values < 0.100 were still considered in the multivariable analyses.
Results: 75P, 47 (62.7%) males, mean age 54.6 (14.8) years. 24 P (32.0%) had obstructive HCM, mean maximal wall thickness (MWT) was 20.1 (4.6) mm, LV mass 97.2 (30.5) g/m², LV ejection fraction 71.6 (8.3)%, ischemic burden 22.5 (16.0)% of LV. Greater MWT was associated with more severe ischemia (β-estimate: 1.81, 95%CI: 1.07-2.55, p < 0.001). In the multivariable analysis, ischemia was related with native T1 and LGE (Table). Increased ischemic burden was associated with impaired longitudinal strain (β-estimate: 0.08, 95%CI: 0.01-0.14, p = 0.017). No relationship was found between ischemia and radial and circumferential strain.

Multivariable linear regression for factors related with tissue characteristics

	B-estimate	95% confidence interval	p-value
Native T1 (ms)			
Ischemia (% of LV)	1.227	0.833 to 1.622	< 0.001
Non obstructive HCM	-12.198	-26.430 to 2.034	0.092
ECV (%)			
Ischemia (% of LV)	0.001	0.000 to 0.001	0.054
Diabetes	0.026	-0.001 to 0.053	0.055
LGE (%of LV)			
Ischemia (% of LV)	0.002	0.094 to 0.309	< 0.001
Dyslipidemia	-3.215	-6.936 to 0.507	0.089
T2 (ms)			
Ischemia (% of LV)	0.028	-0.001 to 0.058	0.061
Non obstructive HCM	-1.294	-2.389 to -0.199	0.021
Dyslipidemia	1.521	0.484 to 2.558	0.005

Conclusions: CMD is associated with myocardial fibrosis and impaired myocardial deformation in HCM.

CO 112. LEFT VENTRICULAR NONCOMPACTION: THE IMPORTANCE OF IDENTIFYING HIGH-RISK PATIENTS WITHIN THE SCOPE OF LEFT VENTRICULAR HYPERTRABECULATION

José Viegas, Sílvia Aguiar Rosa, Pedro Brás, Alexandra Castelo, Vera Ferreira, Fernanda Gameiro, Pedro Rio, João Abreu, Ana Teresa Timóteo, Ana Galrinho, Luísa Moura Branco, Rui Cruz Ferreira

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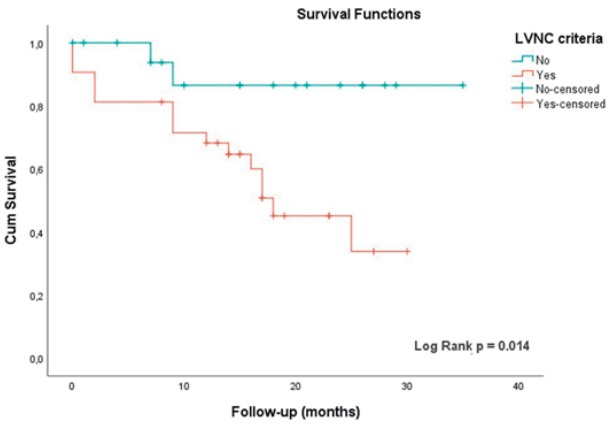
Introduction: Prominent left ventricular (LV) trabeculation is frequently encountered, however LV noncompaction (LVNC) criteria are not always fulfilled. The clinical and prognostic significance of these findings remains unclear.
Objectives: To characterize the patients (P) with echocardiographic suspicion of LVNC and to assess clinical outcomes.
Methods: Retrospective single-centre study that included all echocardiograms between January 2018 and June 2020 perceiving LV hypertrabeculation. The cohort underwent diagnostic assessment for LVNC by Chin and Jenni criteria. Baseline characteristics were evaluated. Composite endpoint of cardiovascular death, heart failure (HF) hospitalization, ventricular arrhythmias (VA) and nonfatal stroke was considered.
Results: 51P, 75% male, mean age 50 ± 18 years. 35P (69%) had associated heart conditions, of which 57% had other known cardiomyopathy (mainly dilated cardiomyopathy), 14% congenital, 26% ischemic and 3% valvular heart disease. 2P were in postpartum period and 1P was an athlete. Family history of cardiomyopathy was present in 8P (16%). 12P underwent genetic testing, with TTN and MYH7 mutations being the most frequently detected. Prior clinical HF was reported in 53%, previous stroke in 14%, and non-sustained and sustained VA in 24% and 4%, respectively. Mean NYHA classification was 1.8 ± 0.7, with 31% being asymptomatic. The prevalence of LVNC by Chin criteria was 31% and by Jenni criteria was 55%. 32P (63%) met at least one LVNC criteria. This group was younger (45 ± 18 vs 59 ± 15, p = 0.004), had higher NT-proBNP levels (3,644 ± 2,819 vs 389 ± 640, p = 0.048) and QRS fragmentation (59% vs 21%, p = 0.027). Significantly higher LV end-diastolic volume (84 (41) vs 64 (28) ml/m², p = 0.008) and end-systolic volume (51 (37) vs 35 (20) ml/m², p = 0.004), along with lower LV ejection fraction (39 ± 12 vs 49 ± 13%, p = 0.009) and global longitudinal strain (-11 ± 5 vs -17 ± 4%, p = 0.003) were noticed. P who met LVNC criteria also had higher number of affected LV segments (6.4 ± 1.8 vs 4.2 ± 1.6, p < 0.001). Over a mean follow-up of 18 ± 9 months, the incidence of composite endpoint was 35%. Univariate Cox analysis showed a significant association between the presence of LVNC criteria and adverse outcomes (HR: 5.108, 95%CI: 1.682-11.236, p = 0.030) (Figure).



Conclusions: LV hypertrabeculation can be encountered in a variety of clinical scenarios and often overlaps with other heart diseases. P satisfying criteria for LVNC had more impairment in LV performance and worse clinical outcomes.

CO 111. HYPERTROPHIC CARDIOMYOPATHY IN A PEDIATRIC POPULATION

Inês Araújo Oliveira[1], Isabel Sá[2], Cláudia Falcão-Reis[3], Mariana Magalhães[1], Filipa Vila Cova[1], Marília Loureiro[1], Sílvia Álvares[4]

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Introduction: Hypertrophic cardiomyopathy (HCM), defined by an increased left ventricle wall thickness not solely explained by abnormal loading conditions, represents a heterogeneous group of disorders with a diversity that is more apparent in childhood than any other age. It can result from mutations in sarcomeric protein-coding genes, metabolic or neuromuscular diseases, drugs or chromosomal/monogenic syndromes. It can be associated with myocardial dysfunction, thromboembolic events and arrhythmias and is the main cause of sudden death (SD) in children.
Objectives: To characterize the clinical evolution and outcome of the pediatric population with HCM followed in a tertiary hospital.
Methods: Retrospective review of patients' records for clinical history, underlying conditions, risk factors, genetic tests, family history and evolution.
Results: Forty patients were included, 55% male. First evaluation was at a median age of 6.7 years. Echocardiography was performed in all patients and cardiac magnetic resonance in 50%. The most common cause was sarcomeric mutation (52.5%) and 71.4% were familial. The HCM was part of a syndromic etiology (Noonan, Opitz-Frias, Arthrogryposis) in 25%, of a metabolic disorder in 12.5% (mitochondrial cytopathy, Congenital disorder of glycosylation and Pompe disease), of Friedreich ataxia in 2.5%, and drug-induced in 2.5%. One patient had no identifiable cause for HCM. Bicuspid aortic valve (2.5%) and dysrhythmia were seen in patients with sarcomeric HCM. The most frequently mutated genes were MYBPC3, MYH7, TNNT2, TNNI3, TPM1 and MYL3. One patient had a mutation related to left ventricular noncompaction. During follow-up, 72.5% of patients were under beta-blocker therapy, 15% required an implantable cardioverter-defibrillator, 5% had cardiac surgery and 2.5% had cardiac transplant. Five patients died: one SD with sarcomeric HCM, 4 with HCM phenocopies. Mortality was greater when diagnosis occurred in the first year of life.
Conclusions: HCM in children is a heterogeneous disease. The early diagnosis allows an adequate follow-up and identifies those at risk of adverse events. HCM associated to genetic syndromes or systemic diseases have poor prognosis. SD is rare. The clinical utility of defining the genotype in children with familial CMP exceeds that at other ages. Management of children requires special and individualized considerations. Genetic counselling is recommended and genetic and clinical screening of relatives should be offered.

CO 110. THREE-DIMENSIONAL MYOCARDIAL DEFORMATION PARAMETERS ARE ASSOCIATED WITH FUNCTIONAL CAPACITY ASSESSED BY CARDIOPULMONARY EXERCISE TESTING IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY

Isabel Gonçalves Machado Cardoso[1], Sílvia Aguiar Rosa[1], Luísa Branco[1], Ana Galrinho[1], Pedro Rio[1], Pedro Brás[1], Ana Sofia Silva[1], António Fiarresga[1], Luís Lopes[2], Miguel Mota Carmo[3], Rui Cruz Ferreira[1]

[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [2]St Bartholomew's Hospital/Reino Unido. [3]Nova Medical School.

Introduction: Myocardial deformation parameters, derived from three-dimensional (3D) speckle-tracking echocardiography (3DSTE) are useful tools to determine left ventricular (LV) systolic function, and are often abnormal before a decline in ejection fraction (EF).
Objectives: To study the correlation between systolic function evaluated by myocardial deformation parameters obtained by 3DSTE and functional capacity in patients with HCM.
Methods: HCM patients seen prospectively at outpatient cardiomyopathy clinic at a tertiary centre were included. Systolic function was assessed by strain measures-global longitudinal, circumferential and radial strain - obtain by 3DSTE, LVEF by 2D and 3D echocardiography were also assessed. Functional capacity was evaluated by CPET.
Results: Of 67 P with HCM (mean age 57 ± 14 years, 41 males), 38 P (56.7%) were in New York Heart Association (NYHA) functional class I, 24 (35.8%) in class II and 5 (7.5%) in class III. 46P (68.7%) had obstructive (HCM), with a maximum LV wall thickness (MWT) of 20 (7) mm. 3DSTE and CPET parameters are reported in the Table. 3D global radial strain showed correlation with pVO2 (rs = 0.336, p = 0.006), as well as absolute values of longitudinal strain (rs = 0.280, p = 0.024). No association was found between LVEF and pVO2. MWT did not correlate with 3DSTE strain measures.

Table 1 - 3DSTE and CPET parameters

3DSTE data	**Values**
LV ejection fraction (%)	61.8 ± 5.9
Indexed LV mass (g/m2)	97.4 ± 23.8
Global longitudinal strain (- %)	9 (5)
Global radial strain (%)	26 (18)
Global circumferential strain (-%)	12 ± 8
CPET data	**Values**
pVO2 (ml/kg/min)	21.01 ± 6.08
% of max predicted VO2 (%)	87 ± 21.7
VE/VCO2 slope	29 (5.3)
Time to AT (min)	6 (6.0)
VO2 in AT	14.27 ± 3.5
Optimal point of ventilation	24.1 ± 4.48
RER	1.03 ±0.09
Time of exercise was (min)	12.4 ± 4.3

Legend: peak oxygen consumption (pVO2), percentage of maximum predicted VO2 = % of max predicted VO2, anaerobic threshold=AT, respiratory exchange ratio=RER

Conclusions: Impaired myocardial deformation was associated with worse functional capacity assessed by peak oxygen consumption.

Sábado, 01 Maio de 2021 | 11H45-13.00

Sala Virtual 3 | CO 22- Insuficiencia cardíaca aguda

CO 113. PATIENTS ADMITTED WITH ACUTE HEART FAILURE AT AN INTENSIVE CARE DEPARTMENT OF A TERTIARY CARE HOSPITAL-CHARACTERIZATION OF PATIENTS SUBMITTED TO MECHANICAL CIRCULATORY SUPPORT

Ana Rita Moura[1], Marta Reina-Couto[2], Roberto Roncon de Albuquerque[2], José Artur Paiva[2]

[1]Hospital Distrital de Santarém, EPE. [2]Centro Hospitalar de S. João, EPE.

Introduction: Heart failure (HF) is one of the major contemporary challenges. Its prognosis gets worse in the presence of exacerbations that require intensive care. In the last decades there has been a huge advance in techniques of mechanical circulatory support (MCS). Data regarding characterization and prognosis of critical acute heart failure (AHF) in the contemporary era in Portugal is lacking.
Objectives: to characterize the patients admitted with AHF and submitted to MCS in an ICU at a Portuguese tertiary care hospital.
Methods: Retrospective study of patients admitted at an ICU with the diagnosis of AHF and submitted to MCS between January and December of

2018 in a tertiary care hospital. Patients were analysed regarding clinical data, triggers and in-hospital and long-term prognosis.
Results: In the reported time frame there were 23 patients admitted for AHF submitted to MCS (9.6% of all AHF patients). They were predominantly men (69.6%), with a mean age of 50.7 ± 16.7 years old. The majority didn't have a previous HF diagnosis (78.3%). Mean ejection fraction at admission was 25.4 ± 15.8%; the majority presented with low peripheral perfusion (95.7%) and almost a quarter (21.7%) had sudden cardiac arrest at admission. Acute coronary syndrome (ACS) was the most common underlying trigger (34.8%). Venoarterial extracorporeal membrane oxygenation (VA-ECMO) was the most used type of MCS (73.9%), mainly as bridge to recovery (52.9%), with a mean duration of 12.0 ± 6.7 days. In this subgroup, myocarditis was the most common trigger (35.3%). Complications associated with this technique were observed in 46.2% of the cases with bleeding from puncture sites being the most common (23.1%; n = 3). Intra-aortic balloon pump was used in 56.5% of the patients, having ACS as the main trigger; there was the need to upgrade to VA-ECMO in about half of the patients (53.8%). There were associated complications in 15% of the cases. Impella was used in 13% of the patients (n = 2) for an average of 5.7 ± 0.6 days and always in simultaneous with VA-ECMO; one patient evolved with hematoma in the puncture site. About half (52.2%; n = 12) of the patients died during index hospitalization, with 2 casualties occurring in the first 24h. From those who survived, no one had a new hospitalization due to HF or death within 12 months after discharge.
Conclusions: This registry demonstrates that MCS in AHF is predominantly used in younger patients, with less comorbidities and with ACS and myocarditis having a relevant role as triggers. ECMO-VA is the preferred technique, and it is mostly applied in a strategy of bridge to recovery. In-hospital mortality is significant. However, in the surviving patients, the severity of the presentation at the index admission did not translate in long term outcome, with no reports of death or new re-hospitalization for AHF within 12 months. These findings support and give arguments to the use of these aggressive measures.

CO 114. DIURETIC RESPONSE IN ACUTE HEART FAILURE PATIENTS PREDICTS 30-DAY HOSPITALIZATION OR EMERGENCY DEPARTMENT VISIT

Inês Fialho[1], Mariana Passos[1], Marco Beringuilho[1], João Baltazar Ferreira[2], Hilaryano Ferreira[2], Daniel Faria[1], Ana Oliveira Soares[2], David Roque[1]

[1]Hospital Amadora Sintra. [2]Hospital Prof. Doutor Fernando Fonseca.

Introduction: Loop diuretics are the basis of congestion relief in acute heart failure (AHF). HF patients often present a reduced maximum diuretic response. The assessment of diuretic response remains a clinical challenge and its prognostic value has not been confirmed yet.
Objectives: To evaluate the prognostic effect of diuretic response in AHF patients.
Methods: We conducted an unicentric retrospective study of consecutive AHF patients admitted on the Day Hospital between January 2017 and October 2019 to receive furosemide by continuous infusion (FCI) for symptom control. Patients with no diuresis registry, in New York Heart Association (NYHA) class I-II, or with a NT pro-BNP level less than 900 ng/dL were excluded. For each patient demographic variables, NYHA class, left ventricle ejection fraction, ambulatory therapy, and clinical and laboratory data were recorded. FCI and diuresis registry were performed for 6 hours. Diuretic response was evaluated through urinary output adjusted to 40 mg of furosemide and patient's weight. Primary endpoint was a composite of 30-day hospitalization or emergency department (ED) visit for AHF.
Results: A total of 111 episodes were included. The median age was 73 (68-82) years, 63.1% (n = 70) males. 80.2% of patients had HF with reduced ejection fraction (n = 89), being 98.2% in NYHA class III (n = 109) and 1.8% in class IV (n = 2). Most were chronically medicated with diuretics (n = 108, 97.3%). The median NT pro-BNP level was 5,213 (2,930-9,077) ng/dL. The median furosemide dose administrated was 200 (200-200) mg, the median diuresis was 240 (157-350) mL per 40 mg of furosemide. The primary endpoint occurred in 46.8% of patients (n = 52). Diuretic response was significantly lower in patients who presented the primary endpoint (2.4 mL vs 3.5 mL, 95%CI 7.5-114.3, p = 0.001), while NT-pro BNP level was not significantly different (p = 0.181). Diuretic response was an independent predictor of the primary endpoint (OR 0.684, 95%CI 0.535-0.875). The multivariate logistic regression model showed that diuretic response adjusted to age and serum creatinine performed even better as prognostic parameter (OR 0.594, 95%CI 0.415-0.850). This model yielded a good prognostic performance (AUC 0.789, 95%CI 0.686-0.910, p < 0.001).
Conclusions: Diuretic response has prognostic value in our HF patients. Urinary output adjusted to 40 mg of furosemide and weight is an independent predictor of 30-day hospitalization or ED visit for AHF.

CO 116. BAUN SCORE, A BETTER PREDICTIVE MODEL OF IN-HOSPITAL AND LONG-TERM OUTCOMES IN ACUTE HEART FAILURE?

João Miguel Santos, Inês Pires, Vanda Neto, Joana Correia, Luísa Gonçalves, Inês Almeida, Emanuel Correia

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio, EPE.

Introduction: Patients hospitalized due to acute heart failure (AHF) compose a heterogeneous population whose prognosis is difficult to forecast. Previously, BAUN score has proven to be able to accurately predict in-hospital mortality (IHM) in AHF. We aimed to evaluate BAUN score performance in the prediction of long-term outcomes in this population, comparing it to the recently validated Get With The Guidelines (GWTG) score.
Methods: A retrospective analysis of 1,052 patients admitted to a Cardiology ward due to AHF was performed. 268 patients were excluded due to data omission or therapy with sacubitril/valsartan. Using the variables systolic blood pressure, urea, brain natriuretic peptide and sodium at admission, BAUN score was calculated, ranging from 0-28 points. GWTG score was also calculated at the index event. ROC curve analysis was used to compare the predictive value of the two scores for IHM. Kaplan-Meyer and Cox-regression analysis were performed to evaluate BAUN score prediction ability for 24-month mortality (24-MM) and for the composite endpoint of 24-month rehospitalization or death (24-MH).
Results: Mean patient age was 77 (± 10) years; 51% were men. Mean left ventricle ejection fraction (EF) was 49% (± 16.4). An EF< 40% was present in 31% of patients. IHM, 24-MM and 24-HM were 6.5%, 17.1% and 57.8%, respectively. Mean BAUN score was 7 (± 5.64). Mean GWTG score was 49.7 (± 9.8). ROC curve analysis for IHM prediction revealed a better performance of the BAUN score (AUC: 0.738, p < 0.001) in comparison with GWTG score (AUC: 0.687, p < 0.001). Patients were stratified into subgroups according to BAUN risk score-very-high risk (≥ 22), high risk (16-21), intermediate risk (5-15) and low risk (< 5). Kaplan-Meyer analysis revealed a significant difference in 24-MM according to risk subgroup (very high: 35%, high: 26.7%, intermediate: 19.5%, low risk: 12.7%, χ^2 = 16.304, p = 0.001). When stratified by non-reduced or reduced EF (≥ 40% or < 40%), there was still a significant mortality difference in subgroups with reduced (p = 0.007) and borderline significant in patients with non-reduced EF (p = 0.05). Kaplan-Meyer analysis also revealed a significant difference between subgroup risk for 24-MH (51%; 63.8%; 63.3% and 75%, respectively, for low, intermediate, high and very-high risk, χ^2 = 21.237, p < 0.001). Cox regression analysis demonstrated that BAUN score independently predicts 24-MM (HR: 1.056, p = 0.043) and 24-MH (HR: 1.033, p = 0.048), even after adjustment for other prognostic markers, such as atrial fibrillation, coronary artery disease, previous myocardial infarction, age, EF and GWTG score.
Conclusions: BAUN outperforms GWTG score for IHM prediction in AHF. It also independently predicts 24-MM and 24-MH. Its use may identify patients with high risk of mortality/readmission, in need of specialized care, and those patients with low risk of death, who might be candidates for lenient surveillance.

CO 118. ENDOCAN - A POTENTIAL NEW BIOMARKER OF INFLAMMATION-DRIVEN "ENDOTHELITIS" IN HUMAN ACUTE HEART FAILURE AND CARDIOGENIC SHOCK

Marta Reina-Couto[1], Carolina Silva-Pereira[2], Patrícia Pereira-Terra[2], Janete Quelhas-Santos[2], João Bessa[2], Catarina Marques[1], Paula Serrão[2], Joana Afonso[2], Sandra Martins[1], Roberto Roncon-Albuquerque[1], José Artur Paiva[1], António Albino-Teixeira[2], Teresa Sousa[2]

[1]Centro Hospitalar de S. João, EPE. [2]Faculdade de Medicina da Universidade do Porto.

Inflammation-driven "endothelitis" appears to contribute to acute heart failure (AHF). Endocan has recently emerged as a novel biomarker of endothelial dysfunction and inflammation. However, its role in human AHF has not been explored yet. This study aimed at evaluating the serum and urinary endocan profile in patients with AHF or with cardiogenic shock (CS). Furthermore, their correlation with biomarkers of inflammatory status, endothelial activation, cardiac dysfunction, systolic (SBP) and diastolic (DBP) blood pressure and prognostic scores was also analysed. This study was approved by the Health Ethics Committee of our hospital. Patients with the diagnosis of AHF (n = 23) or CS (n = 25) were included and blood samples were collected at days 1-2, 3-4 and 5-8. Blood donors were used as controls (n = 22). Endocan, myeloperoxidase (MPO), urinary isoprostanes (U-Isop) and IL-10 were determined by ELISA kits. Serum IL-6, tumour necrosis factor-α (TNF-α) and vascular cell adhesion molecule-1 (VCAM-1) were determined using multiplex immunoassays. C-reactive protein (CRP), differential leukocyte count, B-type natriuretic peptide (BNP), high-sensitivity troponin I (hs-trop I) were evaluated using automated analyzers. Prognostic scores (APACHE II, SAPS II), echocardiographic parameters, SBP and DBP were also evaluated. At admission, serum endocan was significantly higher in AHF and even higher in CS ($p < 0.001$ for linear trend). Urinary endocan values were significantly higher in CS patients ($p < 0.01$ vs controls). During hospitalization, there was no reduction in endocan values or in other inflammatory or endothelial biomarkers in both patients' groups. Within patients, serum endocan was inversely correlated with SBP and DBP and positively correlated with IL-6, IL-10, BNP, hs-trop I and with APACHE II and SAPS II scores. Urinary endocan was inversely correlated with lymphocytes and albumin and positively correlated with serum endocan, IL-6, IL-10, TNF-α, VCAM-1, MPO, U-Isop, hs-trop I and CRP. Furthermore, when patients were stratified according to echocardiographic ejection fraction (EF), serum endocan significantly increased in line with the degree of ejection fraction impairment (p for linear trend = 0.0089). Serum and urinary endocan are increased in AHF and CS patients and positively correlated with proinflammatory status and endothelial biomarkers. There is no reduction of their values during hospitalization which suggests that present hospital treatment is not sufficient to counteract inflammation-driven "endothelitis" which might contribute to the prognosis of acute heart failure. Additionally, serum endocan appears to be a potential novel biomarker in AHF since it is significantly associated with the deterioration of ventricular function, cardiac injury biomarkers and with prognostic scores.

Funded by FCT/FEDER (COMPETE, Portugal 2020), PTDC/MEC-CAR/32188/2017.

CO 117. THE C-REACTIVE PROTEIN/ALBUMIN RATIO AS A PREDICTOR OF MORTALITY IN PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION

Vanda Devesa Neto, Inês Fiuza Pires, Joana Correia, João Miguel Santos, Inês Almeida

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio, EPE.

Introduction: The C-reactive protein (CRP)/albumin (Alb) ratio has recently emerged as a marker for poor prognosis and mortality in critically ill patients. This is because CRP effectively reflects acute-phase inflammation while Alb may reflect malnutrition. However, there is limited evidence of the impact of this score in patients with Acute Heart Failure (HF).
Objectives: This study aimed to identify the association between CRP/alb ratio and 3-month (3MM), 6-month (6MM) and 12-month (12MM) mortality in patients with heart failure with reduced ejection fraction (HFrEF).
Methods: We conducted a retrospective study of 215 patients admitted for acute HF and diagnosed with HFrEF in a Cardiology Department. Baseline characteristics, laboratory findings and disease severity were analyzed. CRP and Alb were measured at admission and CRP/Alb ratio was calculated for every patient. Analysis of the receiver operating characteristic (ROC) curves were performed to evaluate CRP/Alb ratio predictive value for post-hospitalization mortality. Kaplan-Meyer survival plots were used to assess 3MM, 6MM and 12MM. The Mann-Whitney U was used for mean comparison between groups.
Results: Mean age was 74 ± 11 years; 69% were men. Mean LVEF was 29 ± 7%. Mean CRP and Alb values were 2.48 ± 0.2 and 3.95 ± 0.1. The cut-off point, with the most sensitivity (S) and specificity (E) obtained using the Youden index (IY = 0.04921), was 1.13 (S #i= 86% and E ≈ 43%). 15% had CRP/Alb ratio higher than 1.13 and 85% had CRP/Alb ratio lower than 1.13. There was no significant difference between groups in gender, age, cardiovascular risk factors, previous HF, chronic kidney disease, history of acute myocardial infarction and atrial fibrillation. At admission, there were no differences regarding hemodynamic profiles. During hospitalization, patients with higher CRP/Alb ratio had more frequently acute kidney injury, liver injury, higher brain natriuretic peptide (BNP) levels and were treated more frequently with inotropic. 3MM, 6MM and 12MM were 12%, 16% and 19%, respectively. Higher CRP/alb ratio was associated with higher 3MM (27.2 vs 7.7%; $p < 0.001$), 6MM (27.2 vs 11.5%; $p = 0.004$) and 12MM (30.3 vs 14.3%; $p < 0.001$). No difference was found between groups regarding hospitalization due to HF, during follow-up.
Conclusions: Higher CRP/alb ratio is associated with increased mortality in patients with HFrEF. CRP/Alb ratio may be a simple predictive model for short and medium-term mortality in HFrEF. Its use may help to identify patients with a poor prognosis and a need for closer follow-up.

CO 115. ACUTE HEART FAILURE: DOES MIDRANGE EJECTION FRACTION RESULT IN MIDRANGE PROGNOSIS?

João Borges Rosa, Gustavo M. Campos, Sofia Martinho, José Lopes de Almeida, Valdirene Gonçalves, Cátia Ferreira, André Azul Freitas, James Milner, João André Ferreira, Ana Vera Marinho, Patrícia M. Alves, Manuel Oliveira-Santos, Lino Gonçalves

[1]*Centro Hospitalar e Universitário de Coimbra.*

Introduction: Heart failure with midrange ejection fraction (HFmrEF) has recently been recognized and there is limited data regarding mortality outcomes compared to heart failure with reduced (HFrEF) and preserved (HFpEF) ejection fraction. We aimed to evaluate whether HFmrEF has a different prognosis after an acute heart failure (AHF) episode, in a real-world contemporaneous southern European population.
Methods: We retrospectively studied 1,026 patients admitted to our emergency department between November 2016 and December 2017 with discharge diagnosis of AHF. Median follow up was 5 months (IQR 3-11 months). Incidence of rehospitalization, cardiovascular (CV) and all-cause mortality were evaluated through multivariable logistic regression models and by Kaplan-Meyer survival curves.
Results: From all patients, 782 were categorized in HFrEF (34.1%), HFmrEF (19.4%) and HFpEF (46.4%). There was heterogeneity between groups. Compared to HFrEF, HFmrEF patients were older (80[74-84] vs. 76[67-82] years, $p < 0.001$), with lower prevalence of males (61.2% vs. 76.4%, $p = 0.004$) and coronary artery disease (CAD) (35.5% vs. 47.6%, $p = 0.024$), but higher rates of valvular heart disease (VHD) (48.0% vs. 29.6%, $p < 0.001$). Compared to HFpEF, HFmrEF subjects had higher prevalence of males (61.2% vs. 40.8%, $p < 0.001$) and CAD (35.5% vs. 13.2%, $p < 0.001$). At admission, patients with HFmrEF and HFrEF had similar serum creatinine e B-type natriuretic peptide values, but higher than the HFpEF group: 1.38 ± 0.7 vs. 1.45 ± 0.7 vs. 1.28 ± 0.8 mg/dL, $p = 0.019$ and 701 [385-1,191] vs. 1,000 [494-1,776] vs. 360 [214-717] pg/mL, $p < 0.001$, respectively. HFmrEF patients had higher rates of hospitalization (71.7% vs. 43.8%, $p < 0.001$), follow-up readmissions (27.6% vs. 18.7%, $p = 0.034$), CV (11.8% vs. 5.0%, $p = 0.025$) and all-cause mortality (25.7% vs. 14.9%, $p = 0.015$), compared to HFpEF; no differences comparatively to HFrEF. There was no difference between groups regarding the length of hospitalization (9 [5-15] vs. 8 [5-15] vs. 10 [6-17] days, $p = 0.302$). In multivariate logistic regression model adjusted for age, sex, SBP, CAD, VHD, creatinine, and BNP, HFmrEF increased the risk of CV (OR 2.9, 95%CI 1.2-6.7, $p = 0.016$) and all-cause mortality (OR 2.1, 95%CI 1.2-3.9, $p = 0.011$), but not follow-up readmissions (OR 1.7, 95%CI 0.9-2.9, $p = 0.059$). Kaplan-Meier estimates of CV, and all-cause mortality are shown in Figure 1.
Conclusions: HFmrEF have a similar short-term prognosis to HFrEF and worse than HFpEF, with more readmissions, CV and all-cause mortality, after an AHF episode. Whether this feature is valid in the long-term needs to be ascertained by other studies.

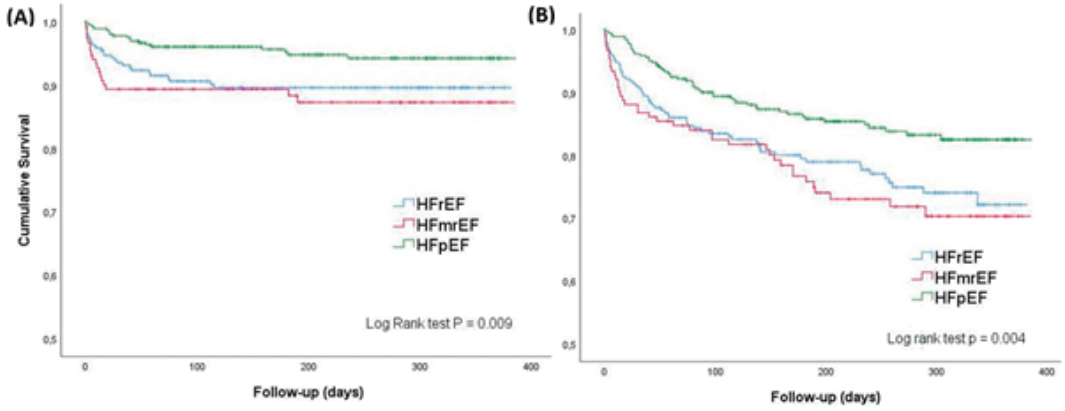


Figure 1. Kaplan Meier curves for CV (A) and all-cause (B) mortality, according to the ejection fraction group.

CO 115 Figure

Domingo, 02 Maio de 2021 | 09H00-10H00

Sala Virtual 3 | CO 24 - Interventional Cardiology - TAVI

CO 129. LOW RATE OF INVASIVE CORONARY ANGIOGRAPHY FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION: REAL-WORLD PROSPECTIVE COHORT FINDINGS

Rita Reis Santos, Mariana Gonçalves, Pedro de Araújo Gonçalves, Rui Campante Teles, Manuel de Sousa Almeida, Mariana Sousa Paiva, Afonso Félix de Oliveira, João Brito, Luís Raposo, Henrique Mesquita Gabriel, Tiago Nolasco, José Pedro Neves, Miguel Mendes

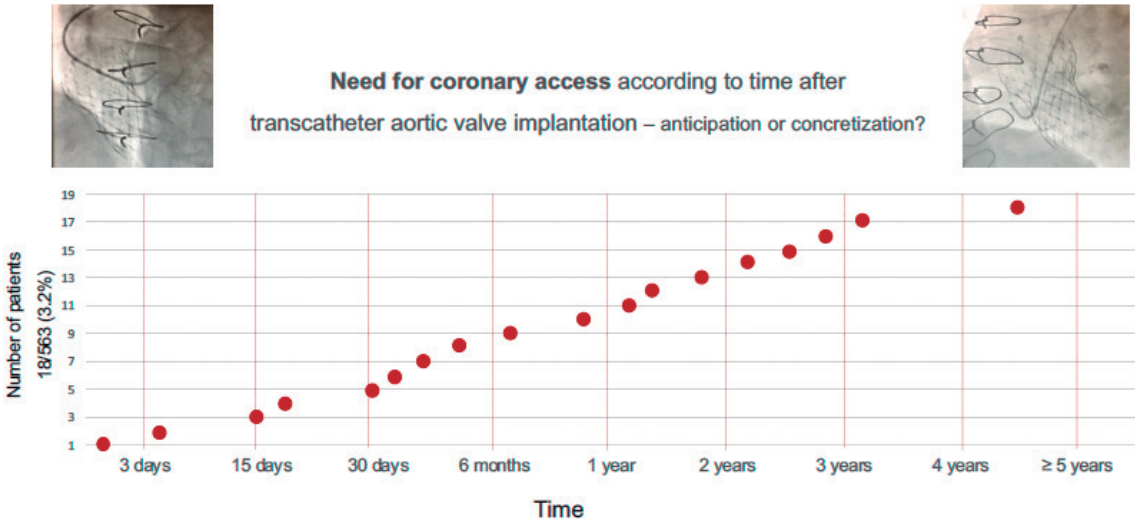
Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Coronary artery disease is prevalent among patients with severe aortic stenosis. Transcatheter aortic valve implantation (TAVI) procedures are increasing at a high rate. Revascularization strategies before TAVI differ and concerns about future coronary intervention influence strategy and device selection. Intraprocedural need for coronary access is a major concern and coronary ostial obstruction due to valve leaflets or calcium displacement can be as high as 0.8% and 3.5% when valve-in-valve procedures are accounted. With the increasing number of procedures, coronary access can become a challenge for interventional cardiology operators and so, real world data about the incidence of acute coronary events after TAVI, the need for coronary reassessment and success rate of consequential procedures should be shared.

Objectives: To evaluate the real need for coronary access after transcatheter aortic valve implantation (TAVI).

Methods and results: Prospective observational single center registry, including 563 consecutive patients that underwent TAVI between April 2008 and November 2018, with both self and balloon expandable valves in a tertiary European center. Mean age was 82.4 ± 6.9 years, 53.3% were female, 16% had previous history of CABG, 33% of previous PCI and 16.6% of MI. Twenty four percent of the patients were revascularized within one year before TAVI in preparation for the procedure. Median STS Score was 4.82 (IQ 2.84). In a median follow up of 24 months (IQ 21.5), 18 patients (3.2%) were identified as potentially in need for ICA: 9 (1.6%) in the setting of stable coronary artery disease and 9 (1.6%) for an acute coronary syndrome. A total of 11 PCI were performed in 9 patients, with a complete success rate of 63.6%. Procedures that were unsuccessful or partially unsuccessful were due to the inability to cross the stent or the drug eluting balloon through the valve struts or misplacement within the coronary artery due to lack of catheter's support.

Conclusions: In this population, a strategy of previous guideline guided revascularization before transcatheter aortic valve implantation (TAVI) was associated with a low rate of myocardial infarction and repeated need of coronary access, with a scattered distribution over time. Assuring future access to coronary arteries in patients at increased risk may depend on the revascularization strategy rather than device selection.



CO 129 Figure

CO 125. PERIPROCEDURAL AND SHORT-TERM STROKE AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION-WHAT ARE THE OUTCOMES AND HOW CAN WE PREDICT IT?

Alexandra Castelo, André Grazina, Tiago Mendonça, Inês Rodrigues, Vera Vaz Ferreira, Pedro Garcia Brás, Rúben Ramos, António Fiarresga, Duarte Cacela, Rui Cruz Ferreira

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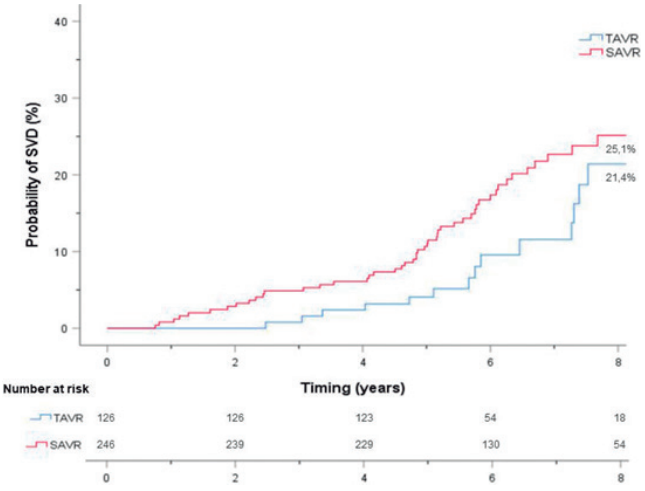
Introduction: Stroke is a known complication after transcatheter aortic valve implantation (TAVI). Although risk factors for its occurrence are being suggested, we still don't have clear tools to predict which patients will most probably have it and how to prevent it.
Objectives: To identify possible clinical and procedural predictors of early post-TAVI stroke.
Methods: Retrospective analysis of consecutive patients (P) submitted to TAVI between 2009 and 2020 in a tertiary center. Baseline characteristics, procedural information and stroke in first 30 days after TAVI were collected.
Results: A total of 494P (56.1% female) were included, with a mean age of 82 ± 6years (minimum 45 and maximum 95 years-old). The majority (98.4%) had at least one cardiovascular risk factor (83.2% hypertension, 67.6% dyslipidemia, 64% excess weight, 36.8% diabetes, 11.9% smoking). Half patients had chronic kidney disease, 34.8% atrial fibrillation, 16.4% peripheral artery disease, 15.4% porcelain aorta, and 12.3% a previous stroke. The procedure was done via transfemoral access in 460P (93.1%), subclavian artery in 16P (3.2%), transcava in 10P (2%) and transaortic in 7P (1.4%). Aortic valve pre-dilation was done in 35.6% and post-dilation in 31.2%. In the first 30 days after TAVI 19P (3.8%) had a stroke (11P with a major and 8P with a minor stroke). Patients with stroke had more hypertension (100% vs 82.4%, p = 0.045), higher BMI (29 vs 27, p = 0.039) and more frequently porcelain aorta (36.8% vs 15.5%, p = 0.014). They also tended to have more peripheral artery disease (31.6% vs 15.7%, p = 0.066). There weren't other differences in baseline characteristics between the two groups. Considering the aspects related to the procedure, post-dilation was the only predictor of events (58.8% vs 32%, p = 0.021). In a multivariable analysis including clinical and procedural predictors, porcelain aorta (p = 0.048, OR = 2.895) and post-dilation (p = 0.042, OR = 2.844) were the independent predictors. Stroke after TAVI was associated with longer hospital stay (36 vs 15 days, p < 0.001) and intensive care unit stay (12 vs 3 days, p < 0.001), higher intra-hospital mortality (14.8% vs 3.2%, p = 0.002), global 30-day mortality (12.1% vs 3.3%, p = 0.0011) and cardiovascular 30-day mortality (11.5% vs 3.4%, p = 0.038).
Conclusions: Periprocedural and 30-day stroke is a relatively uncommon but potentially devastating complication after TAVI. There are clinical and procedural characteristics that are associated with a higher risk and should be considered when selecting patients for treatment and strategies to prevent events.

CO 126. LONG TERM DURABILITY OF TRANSCATHETER AORTIC VALVE REPLACEMENT: OUTCOMES FROM A CONTEMPORARY COHORT FROM A TERTIARY REFERENCE CENTER AT 5-YEARS AND BEYOND

Gustavo Sá Mendes, Pedro M. Lopes, Rui Campante Teles, Pedro Araújo Gonçalves, Luís Raposo, João Abecasis, João Brito, Tiago Nolasco, Márcio Madeira, Afonso Oliveira Félix, Mariana Gonçalves, Miguel Mendes, Manuel de Sousa Almeida

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Background and aim: Long-term data on the durability of transcatheter heart valves is scarce. This is of particular interest as indications expand to younger and lower surgical risk patients. We sought to assess the incidence of long-term structural valve dysfunction (SVD) and bioprosthetic valve failure (BVF) in a cohort of patients with TAVR who reached at least 5-year follow-up, as compared to surgical aortic valve replacement (SAVR), performed within the same time-frame at the same institution.
Methods and results: Consecutive patients with at least 5-year available follow-up, who underwent TAVR between November 2008 to December 2015 in a tertiary single center, were included. From a group of 246 patients undergoing TAVR, 126 had available follow-up data (age at implantation: 83.0 [77.8-87.0] years; EuroScore II: 4.54 [2.60-6.29]%; follow-up: 5.94 [5.06-7.67] years). First generation Corevalve® and Sapien® prosthesis were implanted in 56% and 38% patients, respectively. SVD and BVF were defined according to the new consensus statement from the EAPCI endorsed by the ESC and the EACTS. Mean transaortic pressure gradients decreased from 53.2 ± 1.3 mmHg (pre-TAVR) to 10.4 ± 0.4 mmHg (at discharge or up to one-year after TAVR, p < 0.001), and there was a small non-significant increase at the fifth-year and the last available follow-up (11.2 ± 0.6 mmHg; 14.7 ± 1.8 mmHg, respectively). Moderate and severe SVD were reported in 12 and 4 patients, respectively (8-year cumulative incidence function to SVD: 2.67%; 95%CI, 2.12-3.89). Of these 8 had BVF, 7 of them with hospitalization for acute heart failure. A total of 4 patients died and none required reintervention (redo TAVR or SAVR). BVF for non-SVD were observed in 4 patients (2 subclinic thrombosis successfully treated with anticoagulation and 2 paravalvular regurgitation due to endocarditis).As comparator, from a cohort of 587 patients submitted to biological SAVR, 247 (age 75.0 [70.0-79.0] years; EuroScore II 1.43 [1.06-2.17]%) had available long-term follow-up (6.89 [6.08-8.19] years). Moderate and severe SVD were reported in 42 and 3 patients, respectively (8-year cumulative incidence function to SVD: 3.13%; 95%CI, 2.45-4.21). These events were clinically relevant (BVF) in 19 of them: 8 performed TAVR valve-in-valve procedures and 3 redo SAVR. At the fifth-year of follow-up the incidence of SVD was not statistically different between TAVR (8%) and SAVR (15%), with a p for comparison of 0.137.



Conclusions: In our population of patients with symptomatic severe aortic stenosis treated with first-generation percutaneous bioprostheses, TAVR was associated with a low incidence of BVF and SVD at the long-term follow-up. These outcomes seem indistinct from those occurring in patients submitted to conventional SAVR.

CO 127. TRANSCAVAL TRANSCATHETER AORTIC VALVE IMPLANTATION: AN ALTERNATIVE

André Grazina[1], Alexandra Castelo[1], Duarte Cacela[1], Lino Patrício[2], António Fiarresga[1], Ruben Ramos[1], Tiago Mendonça [1], Inês Goncalves Rodrigues[1], Isabel Gonçalves Machado Cardoso[1], Rui Cruz Ferreira[1]

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[2]*Hospital do Espírito Santo, EPE, Évora.*

Introduction: Transfemoral access is widely accepted as the preferential route for transcatheter aortic valve implantation (TAVI). However, in some patients this is not possible because of severe peripheral artery disease. In such cases transcaval access (TCv) TAVI is an option.
Objectives: This analysis aims to describe the initial experience of TCv TAVI procedure in a tertiary center.
Methods: Retrospective descriptive analysis of the patients submitted to TCv TAVI in a single center. Baseline characteristics, procedure data and

1-year outcomes were noted according to the Valve Academic Research Consortium-2 (VARC-2).

Results: During the study period, 493 TAVI procedures were performed including 10 patients (mean age 77.9 y/o, 80% male) who underwent TCv TAVI. In the latter, average Euroscore II and STS score were 8.56 and 4.81, respectively, obstructive coronary artery disease was present in 50%, previous CABG in 30%, symptomatic peripheral artery disease in 50%, previous stroke in 50% and high frailty scores. VARC-2 procedure success rate was 100%. The average duration of hospitalization after TCv TAVI was 5.9 days (vs 10.4 in the overall TAVI population). In-hospital mortality was 20% (one patient with hemorrhagic shock after upper gastrointestinal bleeding and another with cardiac arrest of indeterminate cause). One-year mortality rate was 30% (one patient died in the first year of follow-up because of acute decompensated heart failure), which compares unfavorably with the 13% one-year mortality in the overall TAVI population. One non-disabling stroke was noted during hospitalization and none after discharge in the first year. One major vascular complication, with a stent implantation in the infra-renal abdominal aorta occurred during hospitalization. One pacemaker was implanted in the first year, none during the hospitalization. No peri-procedure or first year myocardial infarctions occurred. No prosthetic dysfunction, endocarditis or thrombosis occurred in the first year. There was significant symptomatic improvement at one-year follow-up (average NYHA class of 1.5 vs 2.7 preprocedural).

Conclusions: This analysis describes real-world and initial experience with TCv TAVI in high and very high-risk patients. In selected patients with high-risk femoral access, transcaval TAVI may be a reasonable alternative.

CO 128. THE TIMING AND MECHANISM OF HIGH-GRADE AV BLOCK POST-TAVI: KNOWING YOUR ENEMY

Daniel A. Gomes, Afonso Félix Oliveira, Rui Campante Teles, Francisco Gama, Pedro Carmo, João Brito, Pedro de Araújo Gonçalves, Diogo Cavaco, Manuel de Sousa Almeida

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Complete atrioventricular block (AVB) requiring permanent pacemaker implantation (PPMI) is still a major limitation of transcatheter aortic valve implantation (TAVI) procedures. Although right-bundle branch block (RBBB), membranous septum (MS) length and self-expandable prosthesis are recognizable risk factors, their predictability to PPMI is far from satisfactory. While some patients (pts) develop persistent intra-procedure high-grade AVB (H-AVB), others present much later with severe bradycardia. This study aims to describe and compare the characteristics of pts who develop AVB during or after TAVI.

Methods: Single centre prospective registry of 506 consecutive pts submitted to TAVI with no previous pacemaker between 2017 and 2020. Post-procedure PPMI (up to 30 days after discharge) was studied and divided into two groups according to the development of persistent intra-procedure H-AVB (Group A) or post-procedure H-AVB (Group B). Baseline ECG, computed tomography and TAVI-related characteristics were analyzed.

Results: A total of 88 pts (17.3%), aging 83 ± 6 years, 36.4% male, underwent post-TAVI PPMI (6 after discharge). Previous conduction disturbances were present in 50 (56.8%) pts and 25 (28.4%) had RBBB. 83% were submitted to self-expandable TAVI. 42 (47.7%) pts had persistent intra-procedure H-AVB (Group A) whereas 52.3% had post-procedure H-AVB (Group B). In pts with persistent intra-procedure H-AVB previous RBBB was significantly more frequent (45.2%, n = 19) when compared to pts with post-procedure H-AVB (13%, n = 6; p = 0.001). Contrarily, AF and previous left-bundle branch block (LBBB) were more likely in Group B. No difference in valvular calcification, MS length, prosthesis type or implantation technique was noted (table). In the group with post-procedure H-AVB, 21.7% had transient AVB during TAVI and all developed de novo LBBB or first-degree AVB post-TAVI. Among these, 33 (71.7%) pts developed delayed H-AVB (> 48h post-procedure) while the remaining presented earlier.

Conclusions: In pts with PPMI post-TAVI, those with persistent intra-procedure H-AVB had higher rates of previous RBBB, while those with post-procedure H-AVB frequently had a normal baseline ECG. Anatomical and procedural characteristics did not differ between groups. Further studies are needed to confirm these results.

	All cohort (n=88)	Persistent intra-procedure H-AVB (n=42)	No persistent intra-procedure H-AVB (n=46)	*p-value*
Baseline electrocardiogram				
Atrial fibrillation	21 (23.9%)	5 (11.9%)	16 (34.8%)	0.012
First degree AVB	16 (18.2%)	11 (25.6%)	5 (14.3%)	0.219
RBBB	25 (28.4%)	19 (45.2%)	6 (13.0%)	0.001
LBBB	7 (7.7%)	0	7 (15.6%)	0.015
PR interval, ms	181±38	173±31	187±42	0.140
QRS interval, ms	119±27	124±28	116±27	0.225
CT-scan features				
Aortic valve calcium score, AU	2642 (1930-3790)	2607 (1959-3196)	2717 (1925-4307)	0.372
MS length, mm	6.34 (5.77-7.22)	6.65 (5.65-7.22)	6.08 (5.92-6.82)	0.749
Procedure-related				
Self-expandable TAVI	73 (83%)	34 (81%)	39 (84.8%)	0.978
Pre-dilatation	38 (43.2%)	21 (50%)	17 (37%)	0.217
Post-dilation	30 (34.1%)	17 (40.5%)	13 (28.3%)	0.227
Reposition	28 (31.8%)	17 (40.5%)	11 (23.9%)	0.096
Oversizing (% by annulus perimeter)	17±1.1%	15±1.1%	18±1.1%	0.267
Days to PPMI	3 (1-5)	1 (1-2)	5 (3-6)	-

Table 1- Characteristics of pts who implanted permanent pacemaker after TAVI (up to 30 days after discharge).
*Continuous variables are described as mean±standard deviation or median (interquartile range). Categorical variables are described as n (%)

CO 128 Figure

Sexta-feira, Abril 30, Estúdio 3 SPC Porto, 09:00h - 10:15h

Estúdio 3 SPC Porto | Prémio Jovem Investigador

CO 144. LOOKING BEYOND LEFT VENTRICULAR EJECTION FRACTION - A NEW MULTIPARAMETRIC CMR SCORE TO REFINE THE PROGNOSTIC ASSESSMENT OF HF PATIENTS

Gonçalo Lopes da Cunha, Bruno Rocha, João Adriano Sousa, Sérgio Maltês, Catarina Brizido, Christopher Strong, Sara Guerreiro, João Abecasis, Maria João Andrade, Carlos Aguiar, Carla Saraiva, Pedro Freitas, Miguel Mendes, António Ferreira

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

	OVERALL POPULATION (N=436)	WITHOUT EVENTS (N=349)	WITH EVENTS (N=87)	P-VALUE
MALE GENDER	324 (74,3%)	256 (73,4%)	68 (78,2%)	0,358
AGE	64±12	63±12	65±13	0,158
CMR IN INPATIENT SETTING	106 (24,3%)	81 (23,2%)	25 (28,7%)	0,282
HF ETIOLOGY				
ISCHEMIC	232 (53,2%)	189 (54,2%)	43 (49,4%)	0,694
DILATED CARDIOMIOPATHY	135 (31%)	106 (30,4%)	29 (33,3%)	
VALVE DISEASE	16 (3,7%)	11 (3,2%)	5 (5,7%)	
OTHER	52 (11,9%)	42 (12,0%)	10 (11,5%)	
HYPERTENSION	267 (61,5%)	213 (61,4%)	54 (62,1%)	0,906
DIABETES MELLITUS	111 (25,6%)	87 (25,1%)	24 (27,6%)	0,631
PREVIOUS MI	215 (49,4%)	171 (49,1%)	44 (50,6%)	0,811
AF/A FLUTTER	114 (26,3%)	86 (24,8%)	28 (32,2%)	0,161
CABG	49 (11,3%)	35 (10,1%)	14 (16,1%)	0,113
CURRENT SMOKING	82 (18,9%)	71 (20,5%)	11 (12,6%)	0,096
ICD	10 (2,3%)	5 (1,4%)	5 (5,7%)	0,017
ASPIRIN	189 (43,8%)	155 (44,9%)	34 (39,1%)	0,326
IP2Y12	123 (28,5%)	100 (29%)	23 (26,4%)	0,638
ACEI	282 (65,3%)	229 (66,4%)	53 (60,9%)	0,339
ARB	72 (16,7%)	58 (16,8%)	14 (16,1%)	0,872
MRA	178 (41,2%)	139 (40,3%)	39 (44,8%)	0,442
ARNI	39 (9%)	29 (8,4%)	10 (11,5%)	0,369
BETA-BLOCKERS	354 (81,9%)	287 (83,2%)	67 (77%)	0,181
ORAL ANTICOAGULATION	153 (35,4%)	119 (34,5%)	34 (39,1%)	0,424
IVABRADINE	18 (4,2%)	11 (3,2%)	7 (8%)	0,043
DIGOXINE	19 (4,4%)	16 (4,6%)	3 (3,4%)	0,629
FUROSEMIDE	198 (45,8%)	139 (40,3%)	59 (67,8%)	
STATIN	285 (66%)	236 (68,4%)	49 (56,3%)	0,034
NYHA CLASS				
I	176 (40,6%)	158 (45,7%)	18 (20,7%)	<0,001
II	187 (43,2%)	151 (43,6%)	36 (41,4%)	
III	60 (13,9%)	34 (9,8%)	26 (29,9%)	
IV	10 (2,3%)	3 (0,9%)	7 (8%)	
LVEDVI	122 (94 to 166,5)	118 (92 to 161)	144 (105 to 186)	0,013
LVESVi	80 (56 to 121)	75,5 (55 to 116,5)	101 (65 to 136)	0,003
LVEF	33,7±9,7	34,7±9,2	29,7±10,4	<0,001
LUNG WATER DENSITY*	16,9 (13,6 to 20,8)	16,6 (13,4 to 20,1)	19,6 (15,2 to 25,3)	<0,001
MEAN PECTORALIS MAJOR AREA	16,47±6,42	16,5 (12 to 20,5)	14 (11 to 18,5)	0,001
SERUM CREATININE*	1,02 (0,83 to 1,29)	1,01 (0,82 to 1,24)	1,1 (0,85 to 1,5)	0,003
EGFR (MDRD)	74,9±26,9	76,9±25,7	66,9±30,2	0,006
NT-PROBNP*	1030 (407,5 to 2789,5)	800 (341 to 2000)	2765 (1049 to 5931)	<0,001

Table 1 – Baseline Demographics. * non normal distribution

ACEi = angiotensin converter enzyme inhibitor,
AF = Atrial Fibrillation
ARB = angiotensin receptor blocker
CABG = coronary artery bypass graft;
LVEDVi = Left Ventricular End-diastolic volume index
eGFR = estimated glomerular filtration rate;
LVESVi = Left Ventricular End-systolic volume index;
ICD = Implantable cardioverter defibrillator;
LVEF = Left ventricular ejection fraction;
MI = myocardial infarction;
MRA = Mineralocorticoid receptor antagonist.

Figure 1

Figure 1- Measurement of pectoralis major area and lung water density

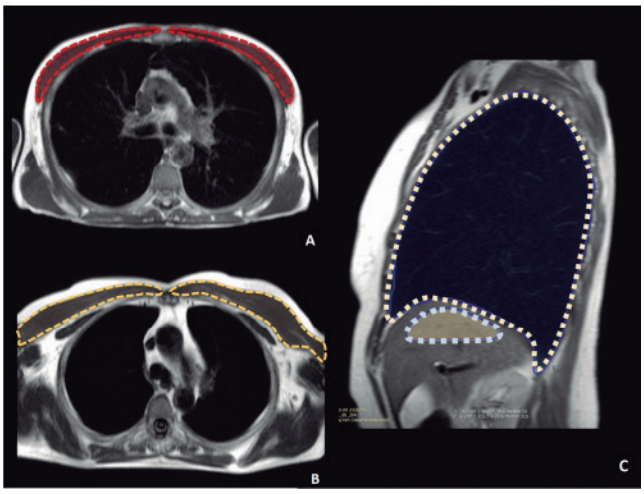


Figure 2

Figure 2 – CMR-HF score

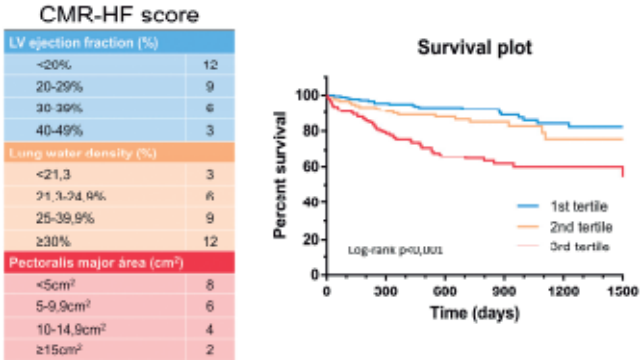


Figure 3

Introduction: Cardiac magnetic resonance (CMR) is recommended in Heart Failure (HF) to assess myocardial structure and function. Recently, the quantification of pulmonary congestion and skeletal muscle mass using CMR have been shown to predict adverse events in HF, but a tool integrating this information is currently unavailable. The purpose of this study was to develop and test a new multiparametric CMR-derived score.
Methods: We conducted a single-center retrospective study of consecutive HF patients with left ventricular ejection fraction (LVEF) (Figure 1-A, B) - and LWD was defined as the lung-to-liver signal ratio multiplied by 0.7, as previously described. Both parameters were measured in standard HASTE images (Figure 1-C). The primary endpoint was a composite of all-cause death or HF hospitalization. Using the Cox regression Hazard Ratios of designated variables, a risk score was developed.
Results: Overall, 436 patients were included (Table). During a median follow-up of 27 (17-37) months, 43 (9.9%) patients died and 57 (13.2%) had at least one hospitalization for HF. LVEF, LWD and PMM were independent predictors of the primary endpoint and were included in the CMR-HF score (Figure 2). The annual rate of events increased from 4.7 to 7.5 and 20.0% from lowest to highest tertile of the score. Roughly half of the events (54%) occurred in patients in the highest tertile of the CMR-HF score. In multivariate analysis, the new score independently predicted the primary endpoint (HR per 5 points: 1.54; 95%CI: 1.21-1.97).
Conclusions: This novel multidimensional CMR-HF score, combining easily obtainable data on left ventricular pump failure, lung congestion and muscular wasting, is a promising tool identifying HF patients with an LVEF.

CO 143. CAN GENE-GENE INTERACTION BETTER PREDICT THE CORONARY DISEASE RISK?

Flávio Mendonça[1], Isabel Mendonça[2], Marina Santos[2], Margarida Temtem[2], Adriano Sousa[2], Ana Célia Sousa[2], Eva Henriques[2], Mariana Rodrigues[2], Sónia Freitas[2], Sofia Borges[2], Graça Guerra[2], António Drumond[1], Roberto Palma dos Reis[3]

[1]Hospital Central do Funchal. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]Nova Medical School.

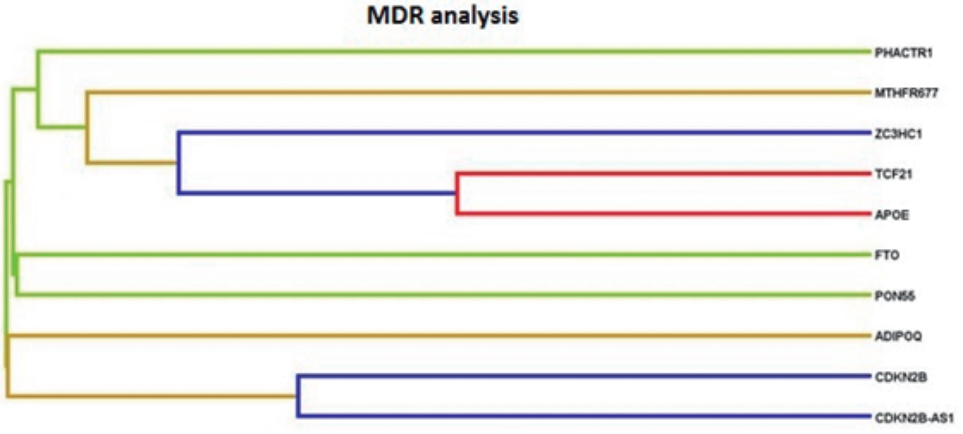
Introduction: Multiple genetic variants have been identified in GWAS associated with Coronary Artery Disease (CAD). New computational and statistical methods emerged beyond logistic regression to better analyze the gene-gene interaction.
Objectives: Study the best gene-gene interaction model and predictor of CAD, using new data mining methods such as Multifactor Dimensionality Reduction (MDR).
Methods: We included 3,139 participants (mean age 53.2 ± 7.8 years, 78.1% male), namely 1.723 coronary patients documented by angiography with one or more epicardial stenoses > 75% and 1.416 controls adjusted with cases for age and gender. Taqman SNP genotyping (Applied Biosystems) was used, and then a gene-to-gene analysis was performed between 33 variants associated with CAD. MDR was applied to obtain the best genetic predictor model for CAD by using the 12 most significant variants.
Results: In the one-gene model, the MDR projected the TCF21 gene polymorphism as the most significant genetic risk factor for CAD. The model with two genes demonstrated synergistic interaction between the TCF21 and APOE variants. The genetic bivariate model of TCF21 and APOE was the best predictive model with an OR of 1.48 (95%CI: 1.28-1.70; p < 0.0001) and with good cross-validation (10/10), with no evidence of overfitting model. The accuracy of the best G-G predictor model of CAD was 0.55. A reasonable sensitivity (60%) and specificity (50%) were obtained from this model.
Conclusions: In our population, the interaction between the genetic variants TCF21 (cell axis) and APOE (lipid axis) showed a consistent CAD association and could be a new marker for CAD prediction. An in-depth investigation of this interaction may lead to the identification of new persons with low conventional but high genetic risk for CAD, as well as to create new therapeutic targets in these patients.

CO 141. METFORMIN IMPROVES DIASTOLIC DYSFUNCTION OF NON-DIABETIC PATIENTS WITH METABOLIC SYNDROME: THE MET-DIME RANDOMIZED TRIAL

Diogo Santos Ferreira[1], Ricardo Ladeiras-Lopes[1], Francisco Sampaio[1], Sara Leite[2], Eduardo Vilela[1], Adelino Leite-Moreira[3], Nuno Bettencourt[4], Vasco Gama[1], Pedro Braga[1], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho. [2]USF Anta. [3]Faculdade de Medicina da Universidade do Porto. [4].

Introduction: Metabolic syndrome (MetS) is a cluster of cardiovascular risk factors, including abdominal obesity, dyslipidaemia, arterial hypertension and abnormal glucose homeostasis, which occur together more frequently than by chance. Diastolic dysfunction (DD) is one of the most frequent manifestations of subclinical cardiac involvement of MetS, ultimately leading to heart failure with preserved ejection fraction. Metformin's new potential therapeutic actions include prevention of cardiac remodeling and fibrosis, and thus we aimed to evaluate if it improves diastolic function (DF) in non-diabetic patients with MetS.
Methods: A prospective, randomized, open-label, blinded-endpoint trial was conducted over 24 months. Fifty-four non-diabetic adults with MetS and DD (defined as mean e'< 10.2cm/s or < 7.2 cm/s for individuals 40-59 and 60-65 years old, respectively) were randomized to lifestyle counseling (control arm) or lifestyle counseling plus metformin (intervention arm) on a target dose of 1,000 mg bid (Figure). The primary endpoint was the change in mean e' velocity, assessed at 6, 12 and 24 months. Secondary endpoints included improvements in insulin resistance (HOMA-IR), functional capacity (peak oxygen uptake – VO_2) and QoL (SF-36 score). Linear mixed effects modelling was used for longitudinal data analysis based on modified intention-to-treat (mITT) and per-protocol (PP) approaches.
Results: Forty-nine patients (mean age = 51.8 ± 6.4; 55% males) were included in the mITT analysis. Metformin use, on top of lifestyle counseling, led to an increase in mean e' velocity during follow-up (Figure), with results at 24 months of +0.67 ± 1.90 cm/s (vs. -0.33 ± 1.50 cm/s in the control group, p = 0.056), which reached statistical significance in PP analysis (+0.80 ± 1.99 cm/s vs. -0.37 ± 1.52 cm/s, p = 0.039). In a random intercept linear mixed model adjusting for age, gender, treatment with drugs targeting the renin-angiotensin-aldosterone axis, presence of heart failure and baseline degree of DD, both mITT and PP analysis showed a statistically significant improvement of



Models	Training accuracy	Testing accuracy	Cross validation consistency	P value	Odds ratio (95% CI)
TCF21	0.53	0.52	9/10	0.001	1.260 (1.094 – 1.452)
TCF21; APOE	**0.55**	**0.55**	**10/10**	**<0.0001**	**1.477 (1.282 – 1.702)**
TCF21; CDKN2B; APOE	0.56	0.54	5/10	<0.0001	1.577 (1.369 – 1.817)

Best interaction models through Multifactor dimensionality reduction (MDR). CI – Confidence interval; Statistically significant for p<0.05.

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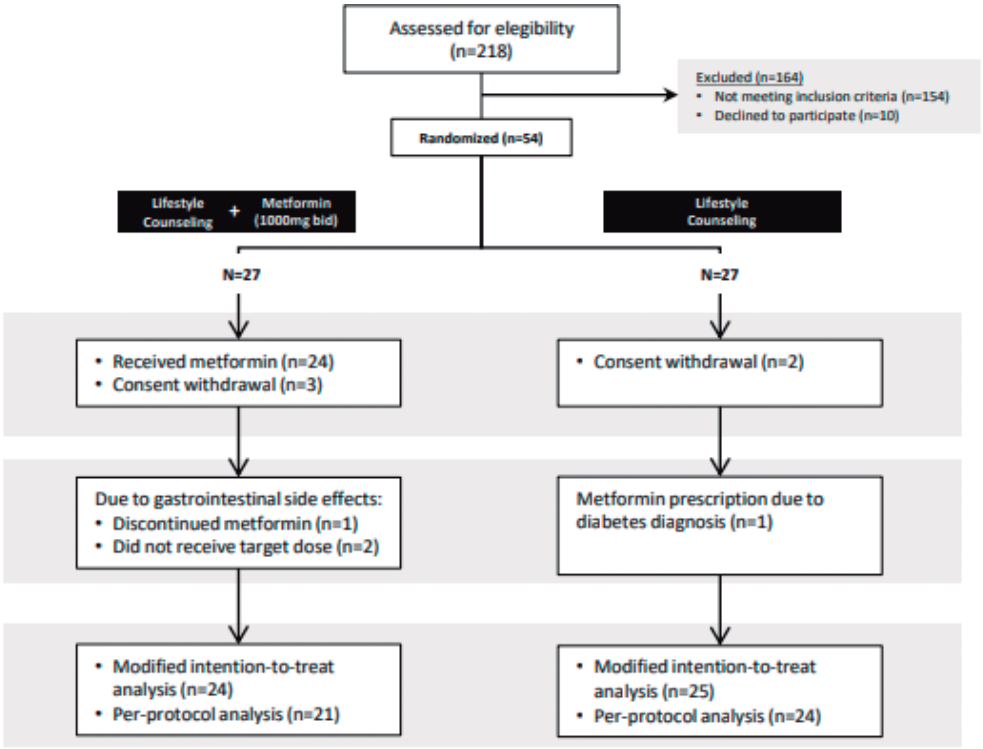
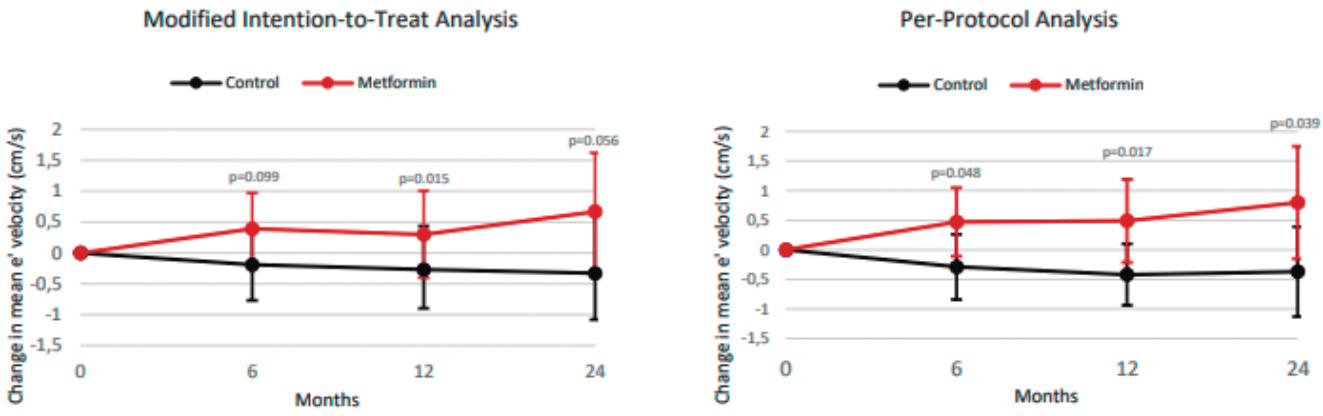




CO 141 Figure

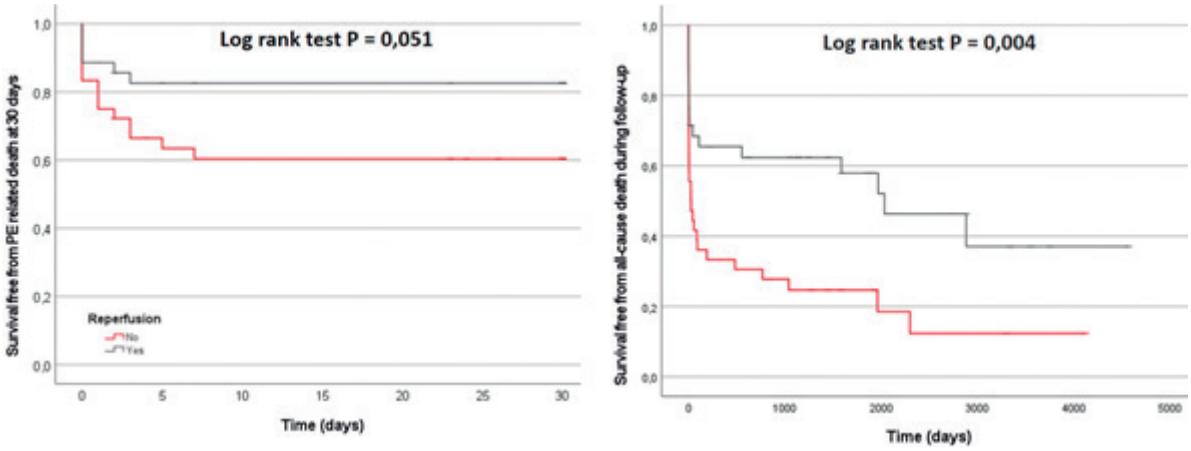
DF with metformin over time (β-coefficient = 0.28, standard error (SE) = 0.13, p = 0.034, and β-coefficient = 0.35, SE = 0.14, p = 0.011, respectively). This effect was independent of the observed reduction in insulin resistance. There were no differences regarding peak VO_2 nor SF-36 score.
Conclusions: Treatment with metformin of non-diabetic MetS patients with DD, on top of lifestyle counseling, was associated with improved diastolic function.

CO 142. HIGH-RISK ACUTE PULMONARY EMBOLISM IN A PORTUGUESE CENTRE: ARE WE DOING ENOUGH?

Mariana Martinho, Rita Calé, Sofia Alegria, Filipa Ferreira, Maria José Loureiro, Tiago Judas, Melanie Ferreira, Ana Oliveira Gomes, Francisca Delerue, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: For high-risk acute Pulmonary Embolism patients (HR-PE pts), reperfusion treatment is imperative to improve mortality. Although systemic thrombolysis (ST) is generally an appropriate first-line therapy, several population-based studies report its underuse. Data on epidemiology, management and outcomes of HR-PE in Portugal is scarce.
Objectives: Estimate the reperfusion rate in HR-PE pts, the reasons for non-reperfusion (NR) and how it influences outcomes.
Methods: Retrospective single-centre registry of consecutive HR-PE pts between 2008-2018, defined by the 2019 ESC guidelines criteria. Independent predictors for NR were assessed by multivariate logistic regression. The cumulative incidence of PE-related mortality at 30 days was calculated according to the Kaplan-Meier method and differences stratified by reperfusion were assessed using the log-rank test.
Results: Of a total of 1,955 pts admitted with acute PE, 74 (3.8%) had HD instability at admission (mean age 68 ± 15 years). The majority of pts (68.5%) came from the emergency department while the remaining 31.5% were already hospitalized for other reasons. The total reperfusion rate



CO 142 Figure

was 50% - 35 pts were submitted to systemic thrombolysis, 1pt to first-line percutaneous embolectomy and 1pt to rescue endovascular treatment. Age was an independent predictor of NR (63 ± 17 vs 73 ± 12, p = 0.02) with > 75 years representing 15 times the risk of non-treatment (OR 15.5, 95%CI 3.23-74.25, p < 0.001). Absolute contraindication for thrombolysis was present in 29.7% (22 pts), with recent major surgery (13 pts) and recent cerebral event (8pts) as the most common reasons. The presence of an absolute contraindication for systemic thrombolysis was also an independent predictor of NR (66.7% vs 13.6%; OR 13.3, 95%CI 2.51-70.65, p = 0.002). Being hospitalized was associated with the presence of absolute contraindications for thrombolysis (68.2% vs 14.0%, p < 0.001) and was also an independent predictor of NR (38% vs 77.3%; OR 8.49, 95%CI 1.56-46.11, p = 0.013). PE-related death at 30 days was 28.4% (21pts), which was significantly lower in the reperfusion group (17.1% vs 38.9%, p = 0.042). At a mean follow-up of 2.5 ± 3.3 years, survival rate was 33.8% (Figure).
Conclusions: Low reperfusion rate due to contraindications for thrombolysis was associated with high PE-related mortality. This data suggests that it is necessary to implement interventional alternative strategies, at a national level, to improve outcomes.

CO 146. CORONARY COLLATERALS GRADING IN CHRONIC TOTAL OCCLUSIONS: IS IT ENOUGH TO PRESUME ISCHEMIA AND VIABILITY?

Gustavo M. Campos, Luís Leite, Rodolfo Silva, Andreia Gomes, Elisabete Jorge, Lino Gonçalves, Maria João Ferreira

Centro Hospitalar e Universitário de Coimbra.

Introduction: The establishment of well-developed collateral in Chronic Total Occlusions (CTO) was assumed to prevent ischemia, but some studies stated that in majority the collateral function during increased blood flow demand in viable myocardium is predominantly insufficient. Current guidelines recommend CTO revascularization in patients with symptoms and/or marked ischemic burden. PET-CT is able to detect both myocardial ischemia and viability with high accuracy.
Objectives: To analyze the association between the presence of ischemia and viable myocardium as evaluated by 13N-NH3/FDG PET-CT and collateral development on coronary angiography.
Methods: Prospective, observational study including patients with a CTO who underwent 13N-NH3/FDG PET-CT between 2017 and 2020. Well developed (WD) collaterals were defined as a concomitant Rentrop grade 3 and Werner collateral connection score 2 or 3. A 17-segment LV model was used for interpretation of the PET study, and segments were graded for myocardial perfusion using a visual, semi-quantitative scale. The Summed Stress Score (SSS) and the Summed Rest Score (SRS) were obtained by adding the individual segment scores from the CTO vascular territory on the stress and rest perfusion studies; the Ischemia Score (Summed Difference Score - SDS) was calculated as the difference between SSS and SRS. The Viability Score was analyzed as the difference between SRS and the FDG score. The CTO territory was considered "viable" based on the established threshold of ≥ 50% FDG uptake compared with remote myocardium.
Results: We recruited 59 patients (median age 62 [57-71]), most frequent CTO arteries were the right coronary (44.1%) and the left descending artery (45.8%). Mean J-CTO Score was 1.4 ± 1.0. WD collaterals were present in 31 (52.5%) patients. WD collaterals were more prevalent in right coronary artery CTOs (67.8% vs. 21.4%, p < 0.001). No differences were found in the Ischemia and Viability scores (ischemia score in WD was 5.1 ± 3.3 vs. 5.3 ± 2.9 [p = 0.943] and viability score in WD was 2.2 ± 2.0 vs. 2.2 ± 2.1 [p = 0.883]). Poor-developed collateral CTO patients had numerically worse perfusion scores, but viability was present in 72.2%.
Conclusions: Angiographic evaluation of CTO collateral function seems to have a poor association with myocardial perfusion and metabolism, so it should not be used as an assumption of the ischemic burden and viability. Myocardial viability was present in the majority of patients with poorly developed collaterals.

CO 145. NOT A COLD SUCCESS - EFFICACY OF CRYOABLATION

Beatriz Silva, Tiago Rodrigues, Nelson Cunha, Pedro Silvério António, Sara Couto Pereira, Pedro Alves da Silva, Joana Brito, Catarina Oliveira, Beatriz Garcia, Margarida Martins, Afonso Ferreira, Nuno Cortez-Dias, Fausto J. Pinto, João de Sousa

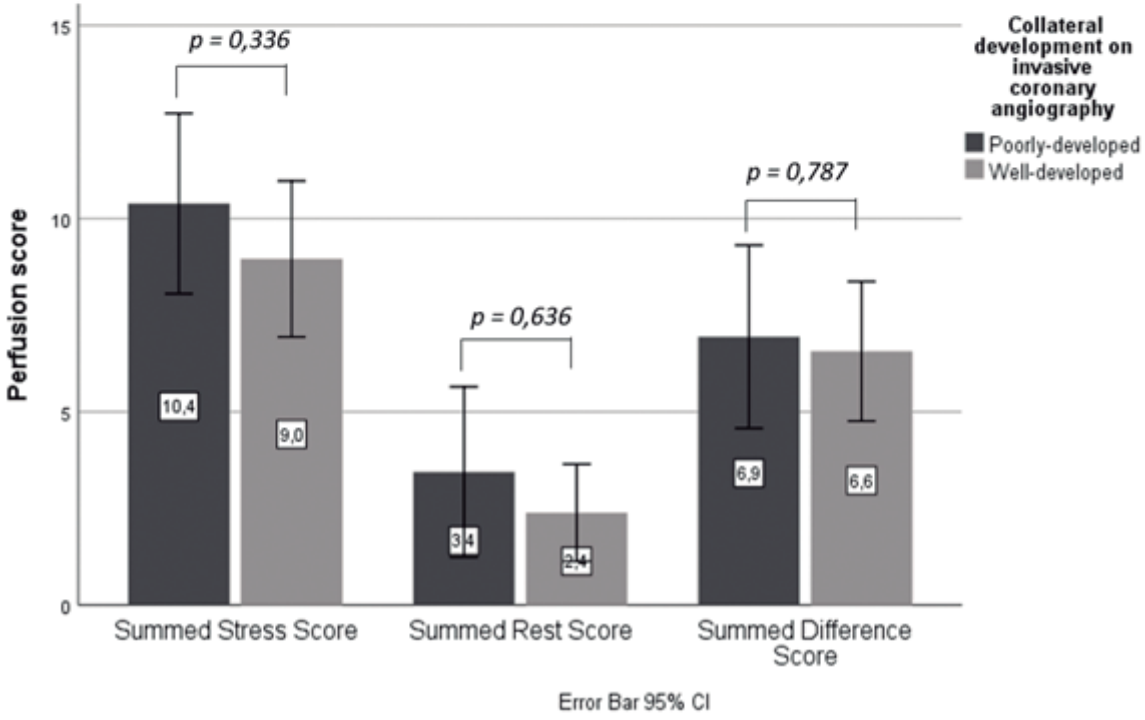
Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria.

Introduction: Atrial fibrillation (AF) is the most common supraventricular arrhythmia with a considerable burden in healthcare. Evidence supporting rhythm control is growing and cryoablation has been gaining ground over traditional point-to-point (PtP) ablation procedures. Predictors of relapse after cryoablation are not completely established.
Objectives: To evaluate the efficacy of cryoablation and determine factors that might explain the risk of relapse.
Methods: Single centre prospective study evaluating AF patients (pts) refractory to antiarrhythmic therapy who performed the first AF ablation procedure. The ablation strategy consisted of pulmonary vein isolation (PVI), complemented with ablation of the cavo-tricuspid isthmus in patients with a history of concomitant flutter. Pts were monitored with Holter/7-day event loop recorders (3, 6, 12 months and annually up to 5 years). Success was assessed from the 90th day after ablation, with the absence of recurrences of any sustained atrial arrhythmias (> 30 sec). Cox regression and Kaplan-Meier survival were used to compare the success of ablation.
Results: We analyzed 232 pts submitted to cryoablation (68.1% male, 59.57 ± 12.39 years old) with a mean follow-up 927.9 ± 847.3 days. Hypertension was present in 65.9% pts, 15.5% had structural cardiomyopathy and 24.8% had a history of obstructive sleep apnea (OSA). Mean CHADsVAsc was 2 and mean left atrium indexed volume was 41.02 ± 2.67 mL^2. The success rate at one

Table 1. Baseline clinical and angiographic characteristics

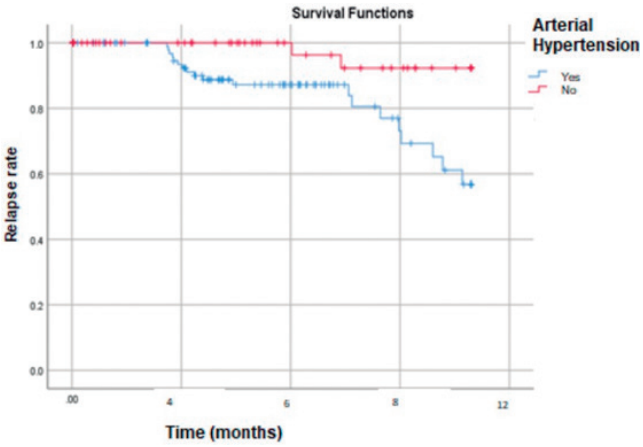
	All patients (n = 59)	Well-developed collaterals (n = 31)	Poorly-developed collaterals (n = 28)	p value
Age	62 [57-71]	60 [56-71]	63 [58-71]	0.654
Clinical characteristics				
Hypertension, medically treated	50 (84.7)	26 (83.9)	24 (85.7)	0.844
Dyslipidemia, medically treated	56 (94.9)	29 (93.5)	27 (96.4)	0.615
Diabetes mellitus. medically treated	28 (47.5)	15 (48.4)	13 (46.4)	0.880
Chronic Kidney disease	11 (18.6)	2 (6.5)	9 (32.1)	0.011
Smoking history				0.433
Current smoker	15 (25.4)	9 (29.0)	6 (21.4)	
Former smoker	21 (35.6)	13 (41.9)	8 (28.6)	
Previous myocardial infarction	26 (44.1)	15 (48.4)	11 (39.3)	0.482
Left Ventricular ejection fraction	46 [31-55]	46 [32-56]	45 [31-54]	0.833
Angiographic characteristics				
Multivessel disease	24 (40.7)	10 (32.3)	14 (77.8)	0.166
CTO vessel				
LAD	26 (44.0)	9 (29.0)	17 (60.7)	0.014
LCX	6 (10.2)	1 (3.2)	5 (17.9)	0.063
RCA	27 (45.8)	21 (67.8)	6 (21.4)	< 0.001
CTO characteristics				
Ostial occlusion	9 (15.3)	4 (12.9)	5 (17.9)	0.597
Intra-stent occlusion	12 (20.3)	5 (16.1)	7 (25)	0.398
Blunt entry	25 (42.4)	12 (38.7)	13 (46.4)	0.549
Calcification	25 (42.4)	13 (41.9)	12 (42.9)	0.943
Tortuosity	3 (5.1)	3 (9.7)	0	0.091
Length (> 20 mm)	28 (47.5)	15 (48.4)	13 (46.4)	0.880
J-CTO score	1.39 ± 1.1	1.42 ± 1.0	1.36 ± 1.1	0.746

Values are expressed as mean ± SD, median [IQ], or numbers (%)



CO 146 Figure

year and three years were 89.6% and 87.6%, respectively. Twenty-one patients had supraventricular arrhythmia relapse after one year and 25 after three years of follow-up. In those who underwent additional REDO procedures, the success rate rose to 95.5% and only 9 patients had relapsed after one year. After the procedure, 30.2% patients suspended anti-arrhythmic drugs, and it is noteworthy that it was not a factor contributing to relapse. In the general population, hypertension was linked to increased risk of relapse (p = 0.043), though other factors, such as diabetes, obesity or OSA, did not seem to increase the risk. A group sub-analysis to determine the risk of relapse showed that CHADsVASc score, age, sex and left atrium indexed volume were non-predictors of supraventricular arrhythmia relapse rate.



Conclusions: Our analysis showed that cryoablation is an effective procedure with very high rates of success after one and three years. Regarding the risk of relapse, hypertension was identified as increasing the risk, unlike other factors, supporting the importance of cardiovascular risk factors control after the procedure.

Sexta-feira, 30 Abril de 2021 | 14H45-16H00

Estúdio 1 SPC Lisboa | Prémio Machado Macedo/CO 15- Cardiac Surgery

CO 148. OFF-PUMP VERSUS ON-PUMP CORONARY ARTERY BYPASS GRAFTING IN MULTI-VESSEL CORONARY ARTERY DISEASE: A PROPENSITY SCORE-MATCHED ANALYSIS OF SAFETY AND LONG-TERM RESULTS

Rui J. Cerqueira[1], Francisca Saraiva[2], Ana F. Ferreira[2], Raquel Moreira[2], Mário J. Amorim[3], António S. Barros[2], Paulo Pinho[3], André P. Lourenço[3], Adelino Leite-Moreira[2]

[1]Centro Hospitalar de S. João, EPE. [2]Faculdade de Medicina da Universidade do Porto. [3]Centro Hospitalar Universitário de São João.

Introduction: The role and the indications for using off-pump coronary artery bypass surgery (OPCAB), instead of the traditional on-pump (ONCAB), is still to be addressed.
Objectives: To describe our centre experience and to compare 15-years survival and early safety outcomes between OPCAB and ONCAB.
Methods: Single-centre retrospective cohort including 9-years of isolated first CABG (2005-2013). Multi-vessel disease with at least 2 surgical grafts patients were considered and the first 50 surgeries of each surgeon with each technique were excluded to account for the learning curve effect. Emergent surgeries and on-pump beating heart procedures were also excluded. A propensity-score matching (PSM) analysis was performed to balance groups and both survival and early outcomes comparison was done within the matched cohort using Kaplan-Meier or Cox stratified and paired tests, respectively. The median follow-up was 9 years, maximum 15 years.
Results: From 3,012 multi-vessel patients with at least 2 surgical grafts, 2,503 were included at the main analysis: 1,487 ONCAB and 1016 OPCAB. ONCAB patients presented more frequently 3-vessels disease and left ventricular dysfunction, but received similar number of grafts than OPCAB, who in turn, received more frequently multiple arterial grafts. The surgical completeness of revascularization (CR) was similar, but hybrid procedures were more frequent in OPCAB raising CR rate in this group. After PSM (646 pairs), both groups were similar regarding pre and peri-operative characteristics. The long-term survival was similar (HR stratified by pair: 1.02 (0.81-1.30), but OPCAB evidenced benefits at early term results including bleeding, postoperative atrial fibrillation and stroke incidence.
Conclusions: At our centre, OPCAB performed by experienced surgeons provides rates of complete revascularization and long-term survival similar to ONCAB. In-hospital results favoured OPCAB.

CO 147. MULTIPLE VERSUS SINGLE ARTERIAL GRAFTING IN THE ELDERLY: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS AND PROPENSITY SCORE STUDIES

Rui J. Cerqueira[1], Francisca Saraiva[2], Raquel Moreira[2], Jennifer Mancio[3], António S. Barros[2], André P. Lourenço[4], Adelino Leite-Moreira[2]

[1]Centro Hospitalar de S. João, EPE. [2]Faculdade de Medicina da Universidade do Porto. [3]St Bartholomew's Hospital/Reino Unido. [4]Centro Hospitalar Universitário de São João.

Introduction: The benefit of total arterial revascularization versus the use of venous grafts in addition to an arterial conduit is still controversial in coronary artery bypass grafting (CABG) surgery, especially in high-risk subgroups due to lack of evidence, namely in the elderly.
Objectives: We conducted a meta-analysis of randomized controlled trials (RCTs), and propensity score (PS) studies comparing survival and early results of elderly patients who underwent coronary artery bypass grafting (CABG) with multiple (MAG) *versus* single arterial grafting (SAG).
Methods: MEDLINE, Web of Science, and Cochrane Library were used to find relevant literature (1960-April 2020). Survival at a follow-up ≥ 1 year and early outcomes were evaluated. Outcomes were collected through hazard ratio (HR) and their variance, frequencies from the matched sample, or adjusted odds ratios. Random effect models were used to compute combined statistical measures and 95% confidence intervals (CI) through generic inverse variance method (time-to-event) or Mantel-Haenszel method (binary events).
Results: Eleven PS cohorts and 2 RCTs comprising > 20,000 patients (> 6,800 MAG and > 13,200 SAG) were included in this meta-analysis. Overall, MAG was associated with lower long-term mortality (pooled HR: 0.80, 95%CI: 0.72-0.88, p < 0.01) at no expense of higher risk of early mortality (pooled OR: 0.81, 95%CI: 0.57-1.15, p = 0.24), but a propensity for MAG being associated with increased risk of sternal wound complications (SWC) was found (OR MAG BIMA: 1.42, 95%CI: 0.98-2.06, p = 0.07).
Conclusions: Advanced age should not limit MAG's use considering its long-term survival benefits, even within the elderly. However, the tendency for higher rates of SWC with MAG calls for a careful selection of patients to this challenging technique.

CO 150. A META-ANALYSIS OF RANDOMIZED CONTROLLED STUDIES COMPARING OFF-PUMP VS ON-PUMP CABG IN THE ELDERLY

Rui J. Machado, Francisca A. Saraiva, Patrícia Sousa, Rui J. Cerqueira, Jennifer Mancio, António S. Barros, André P. Lourenço, Adelino f. Leite-Moreira

Faculdade de Medicina da Universidade do Porto.

Introduction and objectives: Aging and the increasing demand for less invasive open heart surgical procedures have augmented interest in off-

pump CABG as an option in elderly patients. We performed a meta-analysis of randomized clinical trials (RCTs) to investigate the benefits of off-pump CABG (OPCAB) over on-pump CABG (ONCAB) in short and mid-term results among patients older than 60.
Methods: MEDLINE, ISI Web of Science and Cochrane Library were used to find relevant literature (1960-2020). RCTs of OPCAB vs ONCAB within elderly patients (or at least with an elderly subgroup analysis) and that reported mortality either early or during follow-up were included. Myocardial infarction, stroke, repeat revascularization and renal failure were also evaluated, if available. Time-to-event outcomes were collected through hazard ratio (HR) along with their variance and the early endpoints using frequencies or odds ratio (OR). Random effect models were used to compute statistical combined measures and 95% confidence intervals (CI).
Results: We included 9 RCTs, performing a total of 7.046 elderly patients: 3.528 OPCAB and 3.518 ONCAB, 51% being males. Five trials reported mortality during follow-up (6 months (2 studies) to 5.3 years). OPCAB did not impact follow-up mortality (pooled HR: 1.08, 95%CI: 0.86-1.34, p = 0.52). Regarding early results, OPCAB showed similar 30-days mortality (2.3% vs 2.6% in OPCAB vs ONCAB patients, respectively, 6 studies pooled OR: 0.89, 95%CI: 0.61-1.29, p = 0.53); early myocardial infarction (3.1% vs 3.0% in OPCAB vs ONCAB patients, respectively, 6 studies pooled OR: 0.99, 95%CI: 0.67-1.46, p = 0.95); and renal failure (2.6% vs 3.4% in OPCAB vs ONCAB, 5 studies pooled OR: 0.77, 95%CI: 0.53-1.11, p = 0.16). The early need for repeat revascularization was significantly higher in OPCAB (1.3% vs 0.4% in OPCAB vs ONCAB, 2 studies pooled OR: 2.58, 95%CI: 1.16-5.75, p = 0.02). Of note, OPCAB had a higher risk of incomplete revascularization (34% vs 29% in OPCAB vs ONCAB, respectively, pooled OR in both trials included in repeat revascularization result: 1.24, 95%CI: 1.06-1.45, p < 0.01). On the other side, OPCAB had a non-significant lower risk of early stroke (1.9% vs 2.7% in OPCAB vs ONCAB patients, respectively, 7 studies pooled OR: 0.72, 95%CI: 0.42-1.05, p = 0.09).
Conclusions: Pooling data from RCTs in elderly patients showed that OPCAB and ONCAB provide similar mid-term results. Concerning early outcomes, OPCAB was associated with a higher risk of early repeat revascularization. Further studies with larger elderly samples are needed to establish the better surgical strategy for these patients.

CO 151. HEART SURGERY WAITING LIST MANAGEMENT IN AN ULTRA-PERIPHERAL REGION – EXPERIENCE OF A CENTER IN PORTUGAL

Fabiana Silva Duarte, Raquel Dourado, Maria Inês Barradas, Luís Oliveira, Cátia Serena, António Fontes, André Monteiro, Carla Almeida, Carina Machado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Heart surgery is becoming increasingly necessary and the geographic distance from large surgery centers may raise difficulties and limitations to patient referral.
Objectives: To characterize a cohort of patients with indication for heart surgery. To assess referral motives and waiting times for these patients, regarding surgery priority, in an ultra-peripheral region in Portugal.
Methods: Retrospective analysis of 420 patients waiting for heart surgery between January 2016 and September 2020. Criteria for surgery priority selection were based on the official recommendations from Sociedade Portuguesa de Cirurgia Cardio-Torácica e Vascular and Sociedade Portuguesa de Cardiologia.
Results: Out of 420 patients waiting for heart surgery, mean age was 64.8 ± 10.7 years and 74.3% were male. According to body mass index assessment 37.3% of patients were overweight and 39.1% were obese (degrees 1.2 or 3) and this was a determinant parameter for acceptance by some surgery centers. Most patients (48.3%) were referred and accepted in a surgery center of Portugal's Southern region and about a third (33.8%) in the Center region. Regarding clinical condition, 49.0% of patients had coronary heart disease requiring Coronary Artery Bypass Grafting (CABG), 44.7% had aortic and/or mitral valvular disease, 1.0% acute aortic syndrome or ascending aorta aneurism, 1.9% infective endocarditis and the remaining 3.4% had other indications for heart surgery. High priority patients (10.2%) that awaited hospital transference had a mean waiting time of 14.81 ± 9.86 days, most (79.0%) requiring CABG. Patients considered prioritary or elective presented a mean waiting time of 195.7 ± 127.1 days and the three main motives for referral were CABG (41.0%), followed by aortic valve surgery (35.7%) and mitral valve surgery (7.38%). Waiting list mortality was 2.1%.
Conclusions: Due to geographic location particularities, the absence of Heart Surgery in the Region and the inexistence of an established protocol of referral for these patients, heart surgery waiting list management becomes of major importance.

CO 149. PHYSIOLOGIC OR ANGIOGRAPHY GUIDED CORONARY ARTERY BYPASS GRAFTING: A META-ANALYSIS

Diana Vale Carvalho[1], José Luís Martins[1], Vera Afreixo[2], Luís Santos[1], Pedro Carvalho[1], Lisa Ferraz[1], Adriana Pacheco[1], Raquel Ferreira[1], Ana Briosa[1]

[1]Centro Hospitalar do Baixo Vouga/Hospital Infante D. Pedro, EPE. [2]Universidade de Aveiro.

Introduction: While invasive coronary angiography is considered the *gold standard* for the diagnosis of coronary artery disease (CAD) involving the epicardial coronary vessels, coronary physiology-guided revascularization represents contemporary *gold-standard* practice for the invasive management of patients with intermediate CAD. Nevertheless, the long-term results of assessing the severity of stenosis through physiology compared to the angiogram as the guide to bypass surgery (CABG) are still uncertain. This meta-analysis aims to assess the clinical outcomes of a physiology guided CABG compared to angiography-guided CABG.
Objectives: We sought to determine if outcomes differ between a physiology guided CABG compared to angiography-guided CABG.
Methods: We searched Medline, EMBASE, and the Cochrane Library. The last date for this search was June 2020, and all preceding studies were included in the search. We conducted a pooled risk-ratio meta-analysis for 4 main outcomes: all cause death, myocardial infarction (MI), target vessel revascularization (TVR) and major adverse cardiovascular events (MACE). p-value < 0.05 was considered statistically significant. Heterogeneity was assessed with Cochran's Q score and quantified by I2 index.
Results: We identified 5 studies that included a total of 1114 patients. A pooled meta-analysis showed no significant difference between a physiologic guided strategy and an angiography guided strategy in MI (risk ratio [RR] = 0.72; 95%CI, 0.39-1.33; I2 = 0%; p = 0.65), TVR (RR = 1.25; 95%CI = 0.73-2.13; I2 = 0%; p = 0.52), or MACE (RR = 0.81; 95%CI = 0.62-1.07; I2 = 0%; p = 1). Physiologic guided strategy has 0.63 times the risk of all cause death compared to angiography guided strategy (RR = 0.63; 95%CI = 0.42-0.96; I2 = 0%; p = 0.55).
Conclusions: This meta-analysis demonstrates a reduction in all cause death when a physiologic guided CABG strategy was used. Nevertheless, the short follow-up, small sample size of the included studies and the non-discrimination of the causes of death can largely justify these conclusions. Studies with an extended follow-up observation are needed to more robustly draw definitive conclusions.

CO 152. IMPACTO AMBIENTAL DA SUBSTITUIÇÃO CIRÚRGICA DA VÁLVULA AÓRTICA

João Queiroz e Melo[1], Paulo Oliveira[2], Ana Cananão[3], José Santos Neves[2]

[1]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [2]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de S. Francisco Xavier. [3]FCT, UNL.

Introdução: A necessidade da prestação de cuidados de saúde provoca um impacto ambiental muito significativo. Estima-se que cerca de 5% dos gases de estufa do nosso País sejam devidos a estes cuidados (Health Care Without Harm, 2019).
Métodos: Avaliámos o impacto ambiental provocado pela cirurgia de substituição da válvula aórtica em cinco intervenções cirúrgicas de

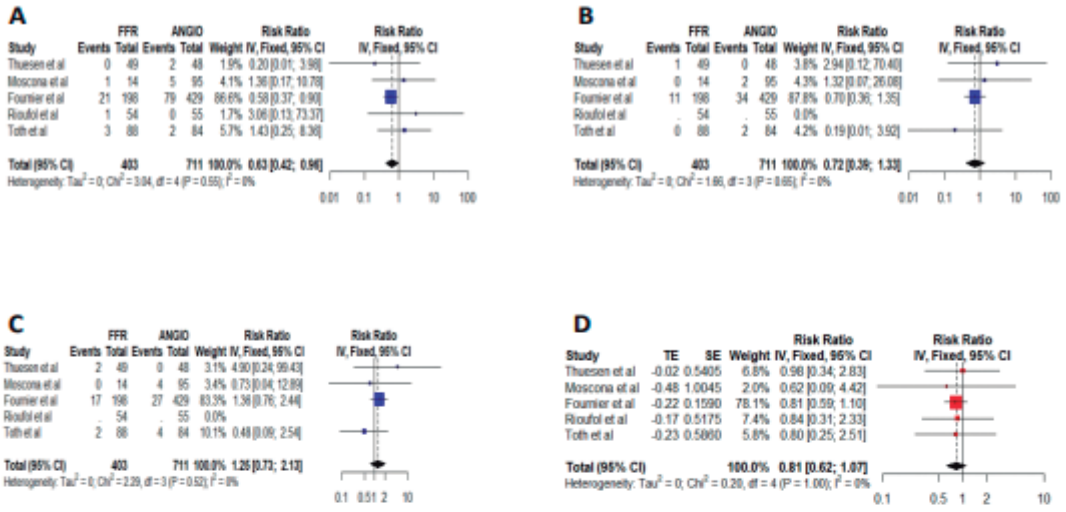


Figure 1. Forest plot of the pooled risk ratio for the outcomes: (A) all cause death; (B) MI; (C) TVR; (D) MACE. The sizes of data markers indicate the weight of the study.

CI: confidence interval; MI: myocardial infarction; TVR: target vessel revascularization

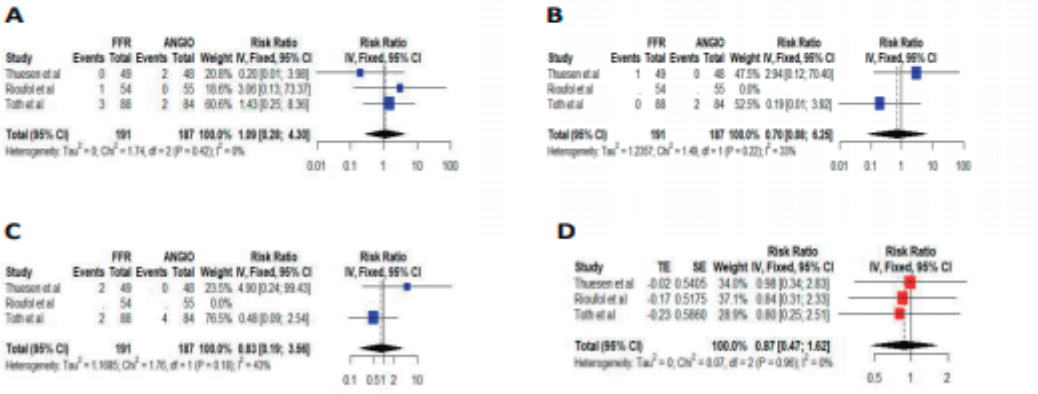


Figure 2. Forest plot of the pooled risk ratio for the outcomes when only RCT's were included: (A) all cause death; (B) MI; (C) TVR; (D) MACE. The sizes of data markers indicate the weight of the study.

CI: confidence interval; MI: myocardial infarction; TVR: target vessel revascularization

CO 149 Figure

substituição isolada da válvula aórtica. Fazemos esta avaliação através dum registo *bottom-up* de todos os consumíveis utilizados bem como dos gastos energéticos da iluminação, equipamentos anestésicos e de cirurgia, e dos consumos AVAC (aquecimento, ventilação, ar condicionado) A energia consumida foi convertida em equivalentes de emissão atmosférica de CO_2 (fator de conversão 0.144 kg.CO_2/kWh para eletricidade, Despacho no.15793-D/2013). Os consumiveis geraram desperdícios que foram pesados seletivamente, segundo a codificação oficial.

Resultados: A média dos consumos energéticos foi de 11,55 kWh na iluminação, de 19,18 kWh nos equipamentos anestésicos, de 49,39 kWh nos equipamentos cirúrgicos e de 33,80 kWh nos equipamentos AVAC. Estes consumos geraram emissões atmosférica de 5,8/4,5/3,8/4,3/8,3 kg CO2, respetivamente, sendo a média de 5,3 kg. Todos os outros consumíveis geraram lixos. O total dos resíduos foi em média de 25 kg por cirurgia, sendo 1,9 kg tipo I e II (resíduos urbanos), 2,4 kg tipo I e II (plástico), 19,5 kg tipo III (resíduos contaminados), e 1,3 Kg tipo IV (resíduos perigosos) Os resíduos tipo III, representaram 78% do total dos desperdícios. Estes resíduos requerem tratamento específico, incineração, e a sua remoção tem um custo significativo.

Conclusões: A cirurgia da válvula aórtica tem um impacto ambiental significativo, quer na emissão atmosférica de CO_2, quer na quantidade de lixos que provoca. Estes dados devem ser avaliados por cada equipa para reduzir de forma significativa, o seu impacto ambiental, quer na redução do consumo energético, quer na diminuição da quantidade dos desperdícios. As medidas que forem tomadas nunca devem comprometer a qualidade dos procedimentos sabendo que as melhorias induzem tambem poupança financeira significativa.

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POSTERS (PO)

Congresso Português de Cardiologia 2021 (CPC2021)

30 de Abril a 2 de Maio de 2021

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PO 1. CHARACTERIZATION OF MYOCARDIAL DEFORMATION IN ALL FOUR CARDIAC CHAMBERS IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY USING FEATURE TRACKING CARDIAC MAGNETIC RESONANCE IMAGING

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Objectives: Hypertrophic Cardiomyopathy (HCM) is the most common monogenic inheritable cardiac disorder, with a global prevalence of 1:500. Myocardial strain, a measure of deformational change, has been used to evaluate cardiac function and dynamics. The objective of this study was to quantify myocardial strain using Feature Tracking-Cardiac Magnetic Resonance (CMR) of all the four cardiac chambers in patients with HCM.
Methods: Forty-eight patients with diagnosis of HCM who underwent CMR were retrospectively included in this study. Thirty-two healthy subjects without a confirmed diagnosis of cardiac disease and normal CMR findings composed the control group. CMR images were acquired using a 1.5T scanner (*MAGNETOM Avanto*, Siemens Healthcare). Four-chamber myocardial strain was quantified using a custom MATLAB-based cardiac image analysis software.
Results: HCM patients had significantly higher left ventricular (LV) mass when compared to control group ($p < 0.01$). None of the other volumetric parameters, including Ejection Fraction were significantly different between groups. LV Global Longitudinal (-15.2 ± 4.73 vs -21.2 ± 2.31; $p < 0.01$) and Radial Strain (47.0 ± 17.4 vs 64.63 ± 10.3; $p < 0.01$) were significantly lower in HCM patients. Left Atrial total strain (?s), active strain (?a) and passive strain (?e) were also lower ($p < 0.01$) in 2-, 3- and 4-chamber views. Regarding RA, the values of ?s (20.5 ± 9.98 vs 32.4 ± 7.43; $p < 0.01$), ?a (11.7 ± 6.10 vs 15.3 ± 4.38; $p < 0.01$) and ?e (11.1 ± 5.75 vs 17.2 ± 4.73; $p < 0.01$) were also significantly decreased in HCM patients, compared to control subjects. There were statistically significant correlations between LV-GLS and RV-GLS, LV-GLS and LA strain parameters and between RV-GLS and RA strain parameters. There were also statistically significant correlations between LV-GLS, LV-GRS and the detection of arrhythmic events ($r (79) = 0.34$; $p < 0.01$; $r (79) = -0.33$; $p < 0.01$).
Conclusions: This study shows that right atrial, left atrial and left ventricle myocardial strain is significantly decreased in patients with HCM. This data aligns with previous reports showing that the mechanic burden of HCM is not limited to the hypertrophied segments or to the left ventricle. We also demonstrate that HCM patients had significantly lower passive, active and total LA global strain values, which highlights the importance of atrial function in the pathophysiology of this disease. There was a statistically significant correlation between different strain parameters in patients with HCM, reflecting an interdependent degradation of function in all 4 chambers with disease progression. Interestingly, there was no significant correlation between the mentioned parameters in control group. These findings bring forward CMR-determined LA and RA function parameters as well as the well-known LV strain as promising biomarkers in the clinical evaluation of patients with HCM.

PO 2. A 3D-TTE LEFT ATRIAL FUNCTION STUDY IN CARDIO-ONCOLOGY PATIENTS

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Introduction: Transthoracic Doppler echocardiography (TTE) remains the standard imaging method to evaluate cancer therapeutics-related cardiac dysfunction (CTRCD). 3D-TTE with strain analysis is a novel technique, proved useful for earlier detection of left ventricular (LV) function impairment. However, diastolic and left atrial (LA) function impact is less studied.
Objectives: To assess LA volumetric and LA strain (LAS) features by 3D-TTE in cardio-oncology patients.
Methods: A prospective study of female breast cancer patients (P) submitted to therapy (TH) who underwent serial monitoring by 2D and 3D-TTE. Standard 2D, 3D-TTE and LAS parameters were evaluated, including longitudinal (LALS) and circumferential strain (LACS) during conduit (cd), contraction (ct) and reservoir (r) phases. P were evaluated at T0, T1 and T2 (before, ≥ 6 and ≥ 12 months after starting TH). CTRCD was defined as an absolute decrease in 2D LVEF > 10% to a value < 54% or a relative decrease in 2D GLS > 15%, according to literature. P with previous cancer treatment, coronary artery disease, significant valvular disease and atrial arrhythmias were excluded.
Results: 98 P (mean age 54.6 ± 12.0 years-old), mostly treated with anthracyclines (78.6%, cumulative dose 268.2 ± 77.6 mg/m^2), anti-HER (70.4%) and radiotherapy (80.6%) were included. 2D LV and LA volumes had a significantly raise from baseline to T1 (2D LVEDV 82.2 ± 18.8 vs 91.9 ± 18.8 mL, $p = 0.019$ and LA 43.3 ± 12.9 vs 49.8 ± 13.3 mL, $p = 0.005$). 2D and 3D LVEF were significantly reduced during TH, however remaining within the limits of normality. 2D GLS was also impaired at T1 (-19.9 ± 2.6% vs -18.6 ± 3.1%, $p = 0.009$). During a mean follow-up of 14.1 ± 8.1months, 31 P (31.6%) developed CTRCD. 3D LV and LA volumes also globally increased

TTE Variable	T0	T1	T2	p-value (T0 vs T1)	p-value (T1 vs T2)	p-value (T0 vs T2)
2D TTE						
LAEDV (ml)	43.3±12.9	49.8±13.3	47.8±14.1	**0.005**	0.356	**0.032**
Mitral E (cm/s)	77.0±19.4	74.1±18.6	73.4±18.2	0.332	0.791	0.205
Mitral A (cm/s)	75.0±19.0	74.6±19.3	75.5±17.5	0.882	0.737	0.860
Mitral E/A	1.1±0.4	1.1±0.4	1.0±0.3	0.651	0.247	0.092
Mitral E' septal (cm/s)	8.5±2.7	8.0±2.7	7.7±2.6	0.277	0.593	0.094
Mitral E' lateral (cm/s)	11.4±3.6	10.9±3.3	10.4±3.0	0.345	0.319	**0.048**
E/E'	8.1±2.6	8.3±2.7	8.5±2.9	0.782	0.616	0.429
Mitral S' septal (cm/s)	7.3±1.4	7.1±1.4	7.1±1.5	0.341	0.902	0.392
Mitral S' lateral (cm/s)	9.4±2.4	9.4±3.0	8.7±2.5	0.920	0.106	0.082
Mitral A' septal (cm/s)	9.6±2.4	8.9±2.3	9.5±2.2	0.194	0.225	0.793
Mitral A' lateral (cm/s)	10.5±2.8	9.6±2.8	9.8±2.6	0.074	0.662	0.124
TR vel (m/s)	2.4±0.4	2.3±0.3	2.2±0.4	0.235	0.631	0.135
LVEDV (ml)	74.2±18.3	81.9±20.0	79.1±19.0	**0.012**	0.336	0.086
LVESV (ml)	27.0±9.3	32.8±12.4	31.2±11.7	**0.002**	0.374	**0.014**
LVEF (%)	63.6±7.4	60.3±8.4	60.9±8.3	**0.011**	0.611	**0.033**
GLS (%)	-19.9±2.6	-18.6±3.1	-18.7±3.3	**0.009**	0.807	**0.020**
3D TTE						
3D LVEF (%)	60.1±6.7	57.1±6.3	58.7±5.5	**0.036**	0.204	0.307
3D LVEDV (ml)	82.2±18.8	91.9±18.8	84.2±18.8	**0.019**	0.065	0.615
3D LVESV (ml)	33.1±10.8	39.9±11.8	34.9±9.8	**0.008**	**0.044**	0.396
Min LA Vol, ml/m2	18.3±6.4	20.6±7.0	20.3±6.5	0.085	0.856	0.118
Max LA Vol, ml/m2	39.1±9.3	43.6±10.6	40.4±10.2	**0.024**	0.120	0.493
Pre-A LA Vol, ml/m2	29.0±8.2	32.1±9.1	30.7±9.1	0.072	0.447	0.316
LA EV, ml	20.9±5.8	23.1±5.9	20.1±6.0	**0.060**	**0.016**	0.506
LALSr, %	23.8±9.2	23.8±9.5	21.2±7.1	0.988	0.121	0.119
LACScd, %	-12.2±9.1	-12.0±6.5	-10.3±7.1	0.875	0.204	0.237
LACSct, %	-19.2±8.0	-17.0±8.3	-16.7±8.7	0.169	0.863	0.144
LACScr, %	31.4±11.6	29.0±10.1	27.0±10.4	0.254	0.327	**0.052**

PO 2 Figure

at T1 comparing to baseline with partially recovery at T2. 3D maximum LA volume was significantly higher at T1 (39.1 ± 9.3 vs 43.6 ± 10.6 ml, p = 0.024). 3D LA ejection fraction (T0 53.7 ± 9.7%, T1 53.4 ± 8.6%, T2 49.9 ± 8.6%, pT0-T2 = 0.039) and LAS values tended to progressively worse during TH. LA dilation (volume> 34 ml/m²) at baseline was correlated to dysfunction in contraction phase at T1 (LACSct -19.6 ± 8.6 vs -17.3 ± 4.6%, p = 0.024). LACSr has substantially decreased from baseline to T2 (31.4 ± 11.6 vs 27.0 ± 10.4%, p = 0.05). In univariate analysis, delta LALSr (T1-T0) was a predictor of CTRCD (mean -5.2% vs 1.9%, p = 0.05).

Conclusions: CTRCD was frequent during the earlier phase of breast cancer treatment. LA function was also affected, mirroring LV volumetric and functional changes. Diastolic dysfunction, assessed through LA reservoir strain, was impaired in association with CTRCD. 3D-TTE usefulness in the surveillance and monitoring of CTRCD goes beyond systolic LV function assessment, allowing a detailed LA function analysis.

PO 3. A META-ANALYSIS OF CORONARY CT ANGIOGRAPHY FOR PREDICTING LONG-TERM MAJOR ADVERSE CARDIAC EVENTS IN STABLE CORONARY ARTERY DISEASE

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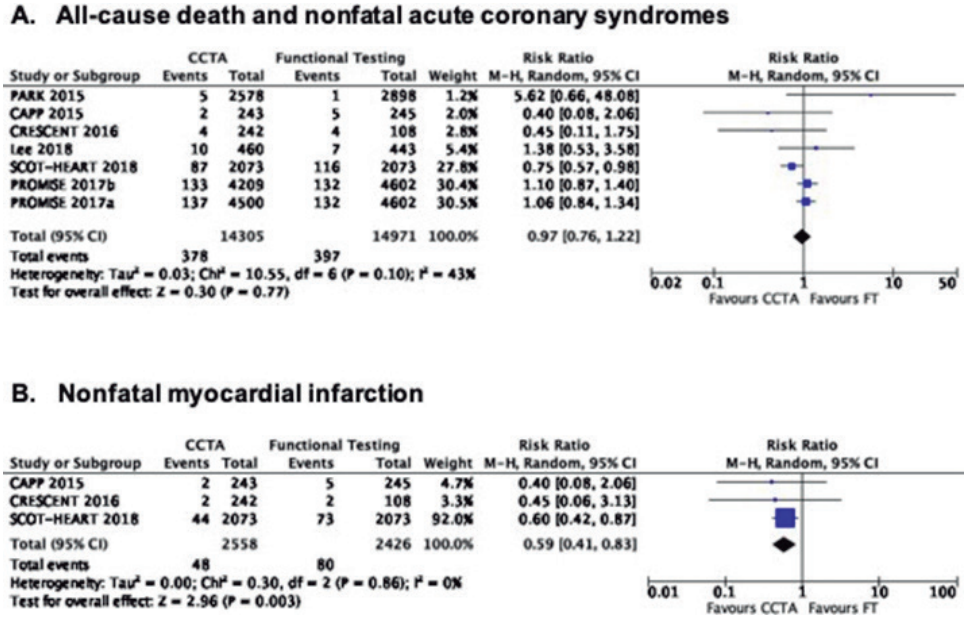
Introduction: Coronary computed tomography angiography (CCTA) was shown to be superior to functional testing (FT) in patients in terms of reducing nonfatal myocardial infarction (MI) in short-term follow-up of acute and stable suspected stable coronary artery disease (CAD). However, the impact of CCTA as the initial strategy on long-term outcomes in stable CAD has not been established.



PO 3 Figure

Methods: We conducted a meta-analysis to compare the outcomes of CCTA versus FT on stable CAD. We searched databases for studies that reported clinical outcomes following CCTA or FT, with a follow-up of at least 12 months.
Results: Eight studies enrolling 29,579 patients were included. A total of 14,457 patients underwent CCTA and 15,122 patients performed a FT. CCTA outperformed FT in terms of nonfatal MI, with a reduction of its risk (risk ratio: 0.59, 95% confidence interval [CI]: 0.41-0.83, p = 0.003). There was a trend for reduced composite endpoint of all-cause death and nonfatal ACS following initial CCTA strategy. Compared with FT, the initial CCTA strategy reduced long-term use of downstream testing, including ICA; but increased the use of coronary revascularization during the first year of follow-up (odds ratio: 1.72; 95%CI 1.11-2.66; p = 0.01).
Conclusions: In stable CAD, CCTA distinctly improved reduced nonfatal MI and long-term use of downstream testing, including ICA. Tradeoffs include more frequent use of coronary revascularization procedures during the first year of follow-up.

PO 4. IMPLICATIONS OF CORONARY ARTERY CALCIUM IN PATIENTS WITH ATRIAL FIBRILLATION/FLUTTER UNDERGOING CATHETER ABLATION

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Introduction: Coronary artery calcium score (CACS) has emerged as a widely available and reproducible non-invasive imaging technique to refine cardiovascular risk stratification, with potential implications in terms of primary prevention interventions.
Objectives: To evaluate the prevalence and clinical implications of coronary artery calcium (CAC) in patients with atrial fibrillation (AF)/flutter (AFL) undergoing catheter ablation.
Methods: Retrospective study, conducted from 2018 to 2019, including patients with AF/AFL undergoing multidetector computed tomography (MDCT) before catheter ablation for procedural planning. Baseline clinical and demographical data were collected, as well as their cardiovascular risk, based on the SCORE (Systematic Coronary Risk Evaluation) system and cardiovascular risk categories. CACS was assessed in patients without history of coronary artery disease.
Results: A total of 313 patients were included (291 with AF and 22 with AFL, mean age of 57 ± 11 years, 59% male). Excluding those over 70 years of age (n = 36, 11%), most patients had low (n = 46, 22%) or moderate (n = 128, 60%) cardiovascular risk and 175 (63%) patients had a CHA2DS2-VASc score = 1 (male) or = 2 (female). Overall, 188 patients (67%) were under anticoagulation and 97 (35%) were taking statin. CAC was present in 147 (48%) patients, with a median score of 55 (range 0 to 2564). Coronary calcium showed a multivessel distribution in 64% of patients, and it was observed most frequently in the left anterior descending artery (n = 121, 82%). The left main coronary artery was affected in 47 (32%) patients. Twenty percent of patients with zero CAC were taking statins, and only 8% of patients with more than 300 CACS were prescribed high-intensity statin therapy. According to recommendations and based on their CACS and ongoing therapy, 68 (25%) patients would be candidates for statin therapy and 43 (15%) patients for changes in the current statin therapy intensity (Table).

Statin therapy intensity according to CACS and recommendations

		Statin Therapy Intensity				
		No Statin	Low	Moderate	High	Total
CACS	N	181	11	70	13	275
0	141	113 (80%)	5 (3.5%)	18 (13%)	5 (3.5%)	28 (20%)
1-99	84	42 (50%)	3 (4%)	33 (39%)	6 (7%)	45 (54%)
100-299	23	13 (57%)	0 (0%)	10 (43%)	0 (0%)	13 (57%)
≥ 300	27	13 (48%)	3 (11%)	9 (33%)	2 (8%)	25 (92%)
Total	275	68 (25%)	11 (4%)	27 (9%)	5 (2%)	111 (40%)

Conclusions: Our findings suggest that evaluating CACS opportunistically in patients with AF/AFL undergoing MDCT before catheter ablation may be clinically valuable in the management of preventive therapies such as statins.

PO 5. THE ROLE OF CARDIAC MAGNETIC RESONANCE TO STUDY UNEXPLAINED OR SUSPECTED ARRHYTHMIAS

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Introduction: Etiology of cardiac arrhythmias is often difficult to determine. Cardiac Magnetic Resonance is the gold standard to anatomical and functional cardiac evaluation, and may represent a fundamental technique for accurate assessment of myocardial arrhythmic substrates.
Objectives: The aim of this study is to impact of CMR in determining arrhythmic risk stratification and diagnostic in patients with suspected or confirmed arrhythmias.
Methods: We performed a seven-year prospective study of patients with suspected or confirmed arrhythmias in which other techniques did not provide a definitive diagnosis. These patients underwent CMR for diagnostic and risk stratification assessment. We applied a protocol to evaluate both ventricles' morphology and functional and late gadolinium enhancement (LGE) presence.
Results: 97 patients were included in the analyses. 63% of the subjects were male with a mean age of 46 ± 17 years old. The indications for patients with suspected or confirmed arrhythmias performing CMR evaluation were the following: 30.9% (n = 30) of the patients had very frequent premature ventricular complexes, 25.8% (n = 25) had sustained ventricular tachycardia (VT), 10.3% (n = 10) unexplained recurrent syncope, 11.4% (n = 11) suspected structural heart disease with arrhythmogenic substract, 6.2% (n = 6) supraventricular tachycardia, 5.2% (n = 5) palpitations, 4.1% (n = 4), non-sustained VT, and 3.1% (n = 3) aborted sudden cardiac death, and 3% other indications. Depressed ejection fraction (EF) (< 50%) was present in 15.5% (n = 15) for LV (mean EF 43 ± 9%). Dilation of LV was found in 28.9% of patients (n = 28, mean LV volume: 116 ± 16 ml/m^2), with RV dilation being present in 2 patients, (RV volume: 144 ± 11 ml/m^2). 16.5% had interventricular septum hypertrophy (mean 15 ± 4 mm/m^2). Left atrium dilation was observed in 118.6% (n = 18) of patients (mean area of 17 ± 2 cm^2/m^2), and right atrium was dilated in only one. CMR contributed to establish either a diagnosis or identifying an arrhythmogenic substrate in 21.7% of patients. Hypertrophic cardiomyopathy was diagnosis in 5.2% (n = 5). The same number of non-ischemic dilated cardiomyopathy were diagnosed. 2.1% (n = 2) had a myocarditis sequelae and 2.1% (n = 2) had right ventricular arrhythmogenic dysplasia. LV non-compaction and a non-ischemic dilated cardiomyopathy were diagnosed in 3.1% of the cases each. 1% had sequelae from a silent myocardial ischemia. In 13.4% (n = 13) we found nonspecific variations, which deserve follow-up. On the remaining patients, CMR was considered normal.
Conclusions: CMR allowed an increase on diagnosis in 21.7% of the patients with suspected or confirmed arrhythmias. This method represents a highly reproducible exam and reliable, that can support the arrhythmic risk stratification and diagnosis of our population when such diagnosis remains elusive with other methods.

PO 6. LEFT ATRIAL APPENDAGE VELOCITY AS AN INSTRUMENT OF PREDICTING ATRIAL FIBRILLATION RECURRENCE AFTER SUCCESSFUL CATHETER ABLATION - A USEFUL TOOL?

João Grade, Khrystyna Budzak, João Simões, Mariana Martinho, Bárbara Ferreira, Alexandra Briosa, Ana Rita Pereira, Inês Cruz, Ana Rita Almeida, Paula Fazendas, Isabel João, Sofia Almeida, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Catheter ablation for the treatment of Atrial Fibrillation (AF) is a modality of treatment in growing expansion. However the sustained long term response in preventing AF recurrence is poor for most patients, namely in those with a dilated left atrium.

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NOME DO MEDICAMENTO Ranexa 375 mg comprimidos de libertação prolongada. Ranexa 500 mg comprimidos de libertação prolongada. Ranexa 750 mg comprimidos de libertação prolongada. Cada comprimido contém 375 mg/500 mg/750 mg de ranolazina Comprimidos de libertação prolongada. Ranexa 375 mg comprimidos de libertação prolongada: comprimido oval azul claro, com 375 gravado num lado. Ranexa 500 mg comprimidos de libertação prolongada: comprimido oval cor-de-laranja claro, com 500 gravado num lado. Ranexa 750 mg comprimidos de libertação prolongada: comprimido oval verde claro, com 750 gravado num lado. **INDICAÇÕES TERAPÊUTICAS** Ranexa é indicado em adultos como terapêutica auxiliar no tratamento sintomático de doentes com angina estável inadequadamente controlada ou intolerantes às terapêuticas antianginosas de primeira linha (como betabloqueantes e/ou antagonistas do cálcio). **POSOLOGIA E MODO DE ADMINISTRAÇÃO** Deve fornecer-se aos doentes o folheto informativo de Ranexa e o Cartão de Alerta do Doente, indicando-lhes que apresentem ao profissional de saúde este Cartão e a lista de medicamentos que tomam em cada consulta. **POSOLOGIA** Ranexa existe em comprimidos de libertação prolongada de 375 mg, 500 mg e 750 mg. *Adultos:* A posologia inicial recomendada de Ranexa é de 375 mg duas vezes ao dia. Após 2–4 semanas, a posologia deve ser aumentada para 500 mg duas vezes ao dia e, consoante a resposta do doente, novamente aumentada até uma posologia máxima recomendada de 750 mg duas vezes ao dia. Se o doente sofrer acontecimentos adversos relacionados com o tratamento (p. ex. tonturas, náuseas ou vómitos), pode ser necessário reduzir a posologia de Ranexa para 500 mg ou 375 mg duas vezes ao dia. Se os sintomas não resolverem após a redução da posologia, deve suspender-se o tratamento. *Tratamento concomitante com inibidores do CYP3A4 e da P-glicoproteína (P-gp):* Recomenda-se que a posologia seja aumentada com cautela em doentes tratados com inibidores do CYP3A4 moderados (p. ex. diltiazem, fluconazol, eritromicina) ou inibidores da P-gp (p. ex. verapamilo, ciclosporina). É contraindicada a administração de inibidores potentes do CYP3A4. *Compromisso Renal:* Recomenda-se o aumento gradual da dosagem em doentes com compromisso renal ligeiro a moderado (clearance da creatinina de 30–80 ml/min). Ranexa está contraindicado em doentes com compromisso renal severo (clearance da creatinina < 30 ml/min). *Compromisso Hepático:* Recomenda-se o aumento gradual da dosagem em doentes com compromisso hepático ligeiro. Ranexa está contraindicado em doentes com compromisso hepático moderado ou severo. *Idosos:* O aumento da dosagem em idosos deve ser realizado com cautela. Os idosos podem apresentar maior exposição à ranolazina devido ao decréscimo da função renal associado à idade. A incidência de episódios adversos foi mais elevada nos idosos. *Baixo peso:* A incidência de episódios adversos foi mais elevada em doentes com baixo peso (≤ 60 kg). Deve ser realizado com cautela o aumento da dose em doentes com baixo peso. *Insuficiência cardíaca congestiva (ICC):* Deve ser efetuado com cautela o aumento da dose em doentes com ICC moderada a grave (Classe NYHA III-IV). *População pediátrica:* A segurança e eficácia de Ranexa em crianças com idade inferior a 18 anos não foi estabelecida. Não existem dados disponíveis. **MODO DE ADMINISTRAÇÃO** Os comprimidos de Ranexa devem ser engolidos inteiros e não triturados, partidos ou mastigados. Estes comprimidos podem ser tomados com ou sem alimentos. **CONTRAINDICAÇÕES** Hipersensibilidade à substância ativa ou a qualquer um dos excipientes. Compromisso renal severo (clearance da creatinina < 30 ml/min). Compromisso hepático moderado ou severo. Administração concomitante de inibidores potentes do CYP3A4 (p. ex. itraconazol, cetoconazol, voriconazol, posaconazol, inibidores da protease do VIH, claritromicina, telitromicina, nefazodona). Administração concomitante de antiarrítmicos de Classe Ia (p. ex. quinidina) ou de Classe III (p. ex. sotalol) que não a amiodarona. **EFEITOS INDESEJÁVEIS** Os efeitos indesejáveis em doentes tratados com Ranexa são geralmente de gravidade ligeira a moderada e surgem com frequência nas primeiras 2 semanas de tratamento. Estes foram registados durante o programa de desenvolvimento clínico de Fase 3, que abrangeu, no total, 1030 doentes com angina crónica tratados com Ranexa. Abaixo enumeram-se por classes de sistemas de órgãos e frequência absoluta os episódios adversos que se consideram, pelo menos em potência, estar relacionados com o tratamento. As frequências definem-se em muito frequentes (≥ 1/10), frequentes (≥ 1/100 a < 1/10), pouco frequentes (≥ 1/1,000 a < 1/100), raros (≥ 1/10.000 a < 1/1.000) e muito raros (< 1/10.000). Doenças do metabolismo e da nutrição *Pouco frequentes:* anorexia, diminuição do apetite, desidratação. *Raros:* hiponatremia. Perturbações do foro psiquiátrico *Pouco frequentes:* ansiedade, insónia, estado confusional, alucinação. *Raros:* desorientação. Doenças do sistema nervoso *Frequentes:* tonturas, cefaleias. *Pouco frequentes:* letargia, síncope, hipoestesia, sonolência, tremor, tonturas posturais, parestesia. *Raros:* amnésia, diminuição do nível de consciência, perda de consciência, coordenação alterada, perturbações na marcha, parosmia. Afeções oculares *Pouco frequentes:* visão enevoada, perturbações visuais, diplopia. Afeções do ouvido e do labirinto *Pouco frequentes:* vertigens, tinido. *Raros:* audição deficiente. Vasculopatias *Pouco frequentes:* afrontamento, hipotensão. *Raros:* frieza periférica, hipotensão ortostática. Doenças respiratórias, torácicas e do mediastino *Pouco frequentes:* dispneia, tosse, epistaxe. *Raros:* aperto na garganta. Doenças gastrointestinais *Frequentes:* obstipação, vómitos, náuseas. *Pouco frequentes:* dor abdominal, boca seca, dispepsia, flatulência, desconforto gástrico. *Raros:* pancreatite, duodenite erosiva, hipoestesia oral. Afeções dos tecidos cutâneos e subcutâneas *Pouco frequentes:* prurido, hiperhidrose. *Raros:* angioedema, dermatite alérgica, urticária, suores frios, exantema. Afeções musculosqueléticas e dos tecidos conjuntivos *Pouco frequentes:* dor nas extremidades, cãibras musculares, edema das articulações, fraqueza muscular. Doenças renais e urinárias *Pouco frequentes:* disúria, hematúria, cromatúria. *Raros:* insuficiência renal aguda, retenção urinária. Doenças dos órgãos genitais e da mama *Raros:* disfunção erétil. Perturbações gerais e alterações no local de administração *Frequentes:* astenia. *Pouco frequentes:* fadiga, edema periférico. Exames complementares de diagnóstico *Pouco frequentes:* aumento da creatinina no sangue, aumento da ureia no sangue, intervalo QT corrigido prolongado, aumento da contagem plaquetária ou leucocitária, perda de peso. *Raros:* valores elevados das enzimas hepáticas. No geral, o perfil de episódios adversos foi idêntico ao do estudo MERLIN-TIMI 36. Nestes estudos a longo prazo, a insuficiência renal aguda foi também relatada com uma incidência inferior a 1% em doentes a tomar placebo e ranolazina. As avaliações realizadas aos doentes que podem ser considerados de maior risco de sofrer episódios adversos quando tratados com outros medicamentos antianginosos, p. ex. diabéticos, doentes com insuficiência cardíaca de Classe I e II ou doença obstrutiva das vias respiratórias confirmaram que estas afeções não estavam associadas a um aumento clinicamente significativo da incidência de episódios adversos. No ensaio RIVER-PCI, em que foi administrada ranolazina até 1000 mg duas vezes por dia ou placebo durante aproximadamente 70 semanas aos doentes com revascularização incompleta após ICP, foi observado um aumento na incidência de episódios adversos nos doentes tratados com ranolazina Neste estudo verificou-se uma taxa mais elevada de relatos de insuficiência cardíaca congestiva no grupo da ranolazina (2,2% *vs* 1,0% no placebo). Adicionalmente, o acidente isquémico transitório ocorreu mais frequentemente nos doentes tratados com ranolazina 1000 mg duas vezes por dia em comparação com o placebo (1,0% *vs* 0,2%, respectivamente); no entanto a incidência de acidente vascular cerebral foi semelhante nos grupos de tratamento (ranolazina 1,7% *vs* placebo 1,5%). Idosos compromisso renal e peso baixo: No geral, os episódios adversos ocorreram com mais frequência entre os doentes idosos e os doentes com compromisso renal; contudo, os tipos de episódios nestes subgrupos foram similares aos observados na população em geral. De entre os episódios referidos com mais frequência, ocorreram mais comummente com Ranexa (frequências corrigidas segundo o placebo) nos idosos (≥ 75 anos) do que nos doentes mais jovens (< 75 anos): obstipação (8% face a 5%), náuseas (6% face a 3%), hipotensão (5% face a 1%) e vómitos (4% face a 1%). Nos doentes com compromisso renal ligeiro ou moderado (clearance da creatinina ≥ 30–80 ml/min), em comparação com os doentes com função renal normal (clearance da creatinina > 80 ml/min), os acontecimentos referidos mais frequentemente, assim como as respetivas frequências corrigidas segundo o placebo, foram: obstipação (8% face a 4%), tonturas (7% face a 5%) e náuseas (4% face a 2%). No geral, o tipo e a frequência dos episódios adversos reportados nos doentes com baixo peso (≤ 60 kg) foram semelhantes aos dos doentes com peso superior (> 60 kg); contudo, as frequências corrigidas segundo o placebo dos episódios adversos comuns que se seguem foram mais elevadas nos doentes com baixo peso do que em doentes mais pesados: náuseas (14% face a 2%), vómitos (6% face a 1%) e hipotensão (4% face a 2%). *Análises clínicas laboratoriais:* Foram observadas elevações pequenas, reversíveis e clinicamente insignificantes da creatinina sérica em sujeitos saudáveis e doentes tratados com Ranexa, aos quais não esteve associada toxicidade renal. Um estudo da função renal realizado em voluntários saudáveis demonstrou haver uma redução da clearance da creatinina sem alteração da velocidade glomerular, o que é consistente com a inibição da secreção tubular renal de creatinina. Pede-se aos profissionais de saúde que notifiquem quaisquer suspeitas de reações adversas diretamente ao Infarmed, I.P. (Tel: +351 21 798 73 73; Linha do Medicamento: 800222444 (gratuita); Fax: + 351 21 798 73 97; E-mail:farmacovigilancia@infarmed.pt;internet:http://extranet.infarmed.pt/page.seram.frontoffice.seramhomepage). **TITULAR DA AUTORIZAÇÃO DE INTRODUÇÃO NO MERCADO (A.I.M.)** Menarini International Operations Luxembourg S.A., 1, Avenue de la Gare, L-1611 Luxembourg _ Luxemburgo. **Representante Local do Titular da A.I.M.** A. Menarini Portugal – Farmacêutica, S.A., Quinta da Fonte, Edifício D. Manuel I, Piso 2 - A, Rua dos Malhões nº. 1, 2770-071 Paço de Arcos, Portugal, Tel: +351 210 935 500. Informações revistas em Outubro de 2017. **Para mais informações deverá contactar o representante local do Titular da Autorização de Introdução no Mercado:** A. Menarini Portugal – Farmacêutica, S.A. Medicamento sujeito a receita médica.

MSRM Regime de comparticipação: RG 69% RE 84%. IECRCM inclusas. RCM disponível a pedido. Para mais informações deverá contactar o titular da AIM.

1. RCM Ranexa **2.** Chaitman B.R. *et al.*; JAMA 2004; 291 (3): 309-316. **3.** Phelps C.E. *et al.*; Clinical Therapeutics 2012; 34 (6): 1395-1407. **4.** Wilson S. *et al.*; JACC 2009; 53 (17): 1510-1516.
5. Mulhestein J.B. *et al.*.; Drugs R D 2013; 13: 207-213.

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Objectives: Our aim was to assess the utility of an echocardiographic parameter for left atrium function, the left atrial appendage velocity (LAAV), in predicting recurrences after catheter ablation.
Methods: We performed a 9 year retrospective analysis of all patients who underwent a successful catheter ablation for the treatment of atrial fibrillation and had a valid pre-procedural transesophagic echocardiogram in a single expert centre. Medical records were analysed for demographic, procedural data and outcomes.
Results: Seventy-three (73) patients fulfilled all inclusion criteria and were analysed. The mean age was 62 ± 11 with a male preponderance (58.7%). The majority of patients (82.7%) had preserved left ventricle ejection fraction. Only 46% of patient had a volumetric assessment of the left atrium dimensions prior to ablation, with slight, moderate and severe dilation of the left atrium in 20%; 8.6% and 28.6% of patients. Of the patients subjected to an AF ablation the average LAAV was 50.6 ± 19 cm/s, with 78% of patients with normal atrial appendage velocities. Patients with low LAAV (< 40 cm/s) had a higher proportion of AF recurrences at 3 and 6 months (58.3 vs 12.8% and 89% vs 21.7%; Chi squared test p < 0.05 for all) with a linear correlation between the presence of recurrences and LAAV (LAAV of 39.1 vs 57.5 cm/s; p < 0.05 OR 0.91 (95%CI = 0.85 – 0.97); r^2 = 0.34 at 3 months and LAAV of 43.5 vs 59 cm/s; p = 0.01; OR 0.94 (95%CI = 0.89 – 0.99); r^2 = 0.24 at 6 months respectively). There was a trend towards association with recurrences at 1 year although it did not reach statistical significance. There was no significant difference in the use of antiarrithmic drugs, either prior or post ablation, in both groups. It was not possible to assess the additive predictive value to the left atrium dimensions due to the low percentage of volumetric assessment of left atrium prior to AF ablation.
Conclusions: Patients with low left atrial appendage velocities had a lower long term success rate of catheter ablation, with higher rates of recurrence at 3 and 6 months and a trend towards higher recurrences at 1 year, with linear correlation which hypothesises the use of the left atrial appendage velocity as novel predictive parameter for an integrative model.

PO 7. GLOBAL LONGITUDINAL STRAIN AS A PREDICTOR OF CARDIOVASCULAR EVENTS AND MORTALITY IN PATIENTS WITH ISCHEMIC HEART DISEASE AND HEART FAILURE WITH PRESERVED/MID-RANGE EJECTION FRACTION

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Introduction: Global longitudinal strain (GLS) is considered a more sensitive marker of systolic dysfunction than other measures commonly used in clinical practice, such as left ventricle ejection fraction (EF). Our objective was to evaluate the impact of reduced GLS in death and cardiovascular events in patients hospitalized due to heart failure with mid-range or preserved ejection fraction, with previous history of acute myocardial infarction.
Methods: A retrospective analysis of 170 patients admitted to a Cardiology ward due to acute heart failure (AHF) was performed. Patients with reduced EF (Simpson biplane method - EF< 40%) were excluded based on echocardiographic evaluation after AHF stabilization. GLS measured by "speckle tracking" technique was calculated for each patient. Measurements were made by the same operator to minimize interoperator variability. Mann-Whitney U test was used for univariate analysis. Kaplan-Meier survival plots and Cox-regression analysis were performed to assess differences in 12-month mortality (12MM) and in the composite endpoint of cardiovascular event or death (12CVM) at 12 months.
Results: A total of 127 patients were included. Mean patient age was 64 (± 14) years; 72% were men. 48% of patients had history of ST elevation AMI. Mean EF was 54% (± 8) and mean GLS was -14.3 (± 3.8). Rates of 12MM and 12CVM were 14.2% and 19.3%, respectively. A statistically significant association between 12MM and 12MCV was found in univariate analysis for GLS (p < 0.001). Kaplan-Meyer survival plots revealed that a compromised GLS (< -16) was associated with significantly increased 12MM (23% vs 2.5%, χ^2: 7.999, p = 0.005) and 12CVM (26.6% vs 10%, χ^2: 4.139, p = 0.042). When stratified by mid-range vs preserved EF, GLS < -16 was associated with worse outcomes, although the results did not reach statistical significance (p> 0.05). However, when considering a severely compromised GLS (< -13), GLS was significantly associated with increased 12MM (52% vs 8.3%, χ^2: 5.533, p = 0.019) and 12CVM (50% vs 8.3%, χ^2: 4.970, *p* = 0.026), in the subgroup of patients with heart failure with mid-range EF. Cox-regression analysis demonstrated that GLS was independently associated with 12MM (HR: 0.668, p < 0.001) and the 12CVM composite endpoint (HR: 0.819, p = 0.008), even after adjustment for other important prognostic markers such as chronic kidney disease, pulmonary disease and diabetes, with significant hazard ratio reduction for each positive point increase in GLS.
Conclusions: GLS is an independent predictor of 12MM and 12CVM in patients hospitalized due to AHF, with an EF ≥ 40% and previous history of acute myocardial infarction. In the subgroup of patients with heart failure with mid-range EF, a severely compromised GLS (< -13) is a strong predictor of 12MM and 12CVM.

PO 8. PATIENTS UNDERGOING INVASIVE CORONARY ANGIOGRAPHY AFTER A POSITIVE SINGLE-PHOTON EMISSION COMPUTED TOMOGRAPHY OR A POSITIVE STRESS CARDIAC MAGNETIC RESONANCE - WHAT TO EXPECT AT THE CATH LAB

Cláudia Jesus Silva, António Ferreira, Mariana Gonçalves, Pedro Lopes, António Ventosa, João Calqueiro, Pedro Freitas, Rita Santos, Sílvio Leal, Sara Guerreiro, João Brito, João Abecasis, Luis Raposo, Carla Saraiva, Pedro de Araújo Gonçalves, Ana Santos, Henrique Mesquita Gabriel, Rui Campante Teles, Manuel Almeida, Miguel Mendes

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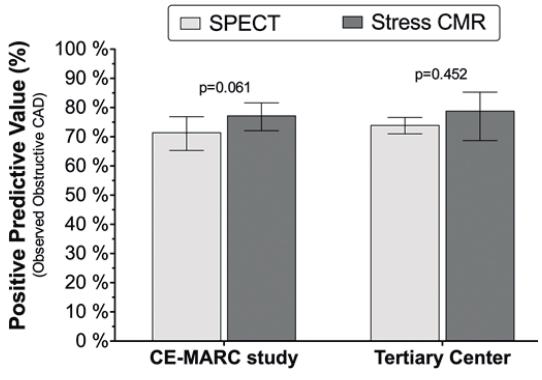
Introduction: Randomized controlled trials comparing stress cardiac magnetic resonance (CMR) and single-photon emission computed tomography (SPECT) suggest similar diagnostic accuracy for detecting obstructive coronary artery disease (CAD). However, there are few data on whether or not this remains true in routine clinical practice. The aim of this study was to assess the clinical and angiographic characteristics of patients undergoing invasive coronary angiography (ICA) after a positive stress CMR or positive SPECT, and to compare their positive predictive value with published results from the CE-MARC trial.
Methods: In this retrospective tertiary-center analysis, we included 429 patients (mean age 67 ± 10 years, 28% women, 42% diabetic) undergoing ICA between January 2016 and December 2020, after a positive stress CMR or positive SPECT. Stress test results, including ischemia location and severity, were classified as reported by their primary readers. Patients with missing data on key variables, and those in whom microvascular disease was considered likely in the original stress test report were excluded. Obstructive CAD was defined as any coronary artery stenosis ≥ 50% in a vessel compatible with the ischemic territory on stress testing.



Results: Out of the total 429 patients, 356 (83%) were referred after a positive SPECT, and 73 (17%) after a positive stress CMR. Patients did not differ regarding age, cardiovascular risk factors, previous revascularization or left ventricular dysfunction, but patients with SPECT were more frequently male (p = 0.046). Overall, 320 patients (75%) had obstructive CAD on ICA. The prevalence of obstructive CAD was similar in patients

with positive SPECT vs. positive stress CMR (76.1% vs. 80.8%, respectively, p = 0.385). There were also no significant differences in the prevalence of left main or 3-vessel disease (9.0% vs. 9.6%, p = 0.871, and 19.7% vs. 23.3% p = 0.483, respectively). Revascularization was performed or planned in 59.3% of patients in the SPECT group, and 52.1% of those in the stress CMR group (p = 0.255). The positive predictive values of both techniques were similar to those reported in the CE-MARC trial (Figure), and would increase to 88.1% and 89.4% for SPECT and stress CMR, respectively, if patients reported as having only mild ischemia were excluded.
Conclusions: In this tertiary center analysis, stress CMR and SPECT showed similar positive predictive values, comparable to those reported in the CE-MARC trial.

PO 9. THE ODYSSEY TO DETHRONE LV EJECTION FRACTION CONTINUES: THE PROGNOSTIC VALUE OF LV GLOBAL FUNCTION INDEX IN HEART FAILURE

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Introduction: Left Ventricular (LV) Global Function index (LVGFi) is a parameter that combines data from global systolic performance and volumetric anatomical information, measurable by non-contrast Cardiac Magnetic Resonance (CMR). We aimed to evaluate whether LVGFi predicts major cardiovascular outcomes and outperforms LV ejection fraction (LVEF) in Heart Failure (HF).
Methods: We conducted a retrospective single-centre study of consecutive patients with HF who were referred to and had a LVEF < 50% at CMR. Other than inadequate images for endocardial or epicardial border delineation, there were no exclusion criteria. LVEF was determined by 3D measurement. LVGFi was calculated as the LV stroke volume to the LV global volume ratio (Figure). The primary endpoint was a composite of time to all-cause death or HF hospitalization.
Results: The cohort was comprised of 433 HF patients (mean age 64 ± 12 years, 74.1% male, ischaemic HF 53.1%, NYHA I-II 83.9%) with a mean LVEF of 33.5 ± 10.0% and LVGFi of 22.8 ± 7.4%. Over a median follow-up of 27 (17-37) months, 85 (19.6%) met the primary endpoint and 42 (9.7%) died. Patients with an event of the primary endpoint had markers of more severe HF, as noted by a reduced functional capacity (NYHA I-II: 63.5 vs. 89.0%; p < 0.001) and increased natriuretic peptides [NT-proBNP: 2664 (1,022-27,242) vs. 791 (337-7,258); p < 0.001). Likewise, CMR showed higher LV volumes (e.g., LV end-diastolic volume index: 137 ± 50 vs. 120 ± 43 mL/m^2; p = 0.001) and reduced LV performance indices, namely LVEF (29.2 ± 10.6 vs 34.5 ± 9.6%; p < 0.001) and LVGFi (19.8 ± 7.4 vs 23.6 ± 7.3%; p < 0.001). Both LVEF and LVGFi independently predicted the primary endpoint in multivariate analysis (separately imputed into a model adjusted for NYHA, NT-proBNP and creatinine). The LVEF model was more powerful than that of LVGFi. Similarly, LVGFi did not provide incremental prognostic information over LVEF in c-statistics analysis (0.653 vs. 0.622; p = 0.645).
Conclusions: While LVGFi independently predicted major outcomes in patients with HF and LVEF < 50%, it did not surpass LVEF. Our findings contrast to those demonstrating LVGFi as a powerful variable that outperforms LVEF in hypertrophic cardiomyopathy, cardiac amyloidosis, and healthy subjects at risk of developing structural heart disease. We hypothesize that LVGFi might be primarily useful in the prognostic stratification of patients with preserved LVEF.

PO 10. IMPACT OF AN INCONCLUSIVE EXERCISE STRESS ECHOCARDIOGRAM ON CARDIOVASCULAR OUTCOMES

Filipa Cardoso, Mário Rui Lourenço, Pedro Von Hafe, Geraldo Dias, Tâmara Pereira, Mariana Tinoco, Marina Fernandes, Olga Azevedo, António Lourenço

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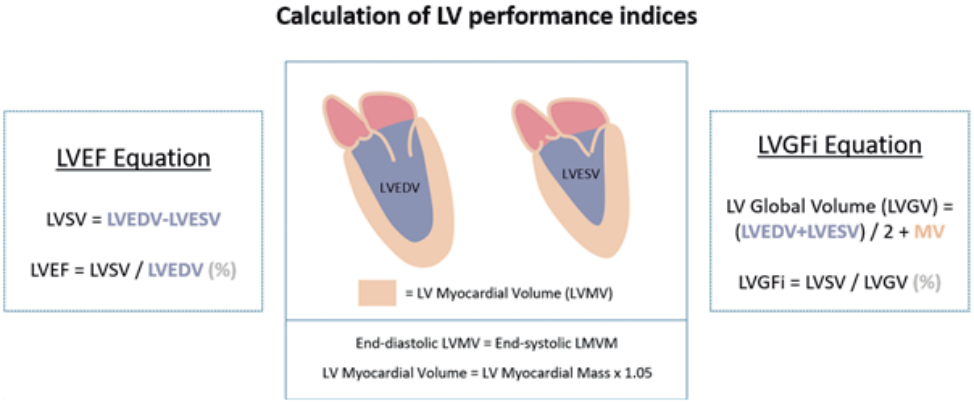
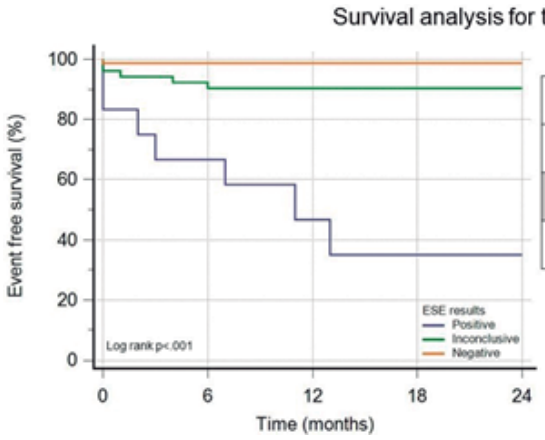
Introduction: Exercise stress echocardiography (ESE) is used for the assessment of suspected or known coronary artery disease (CAD); however, a certain percentage of ESE studies are inconclusive. We aim to evaluate the prognostic impact of an inconclusive ESE on cardiovascular outcomes.
Methods: Single-center retrospective study of consecutive patients (pts) who performed an ESE between 2018 and 2019 for diagnosis or stratification of CAD. All pts performed a symptom-limited Bruce protocol. ESE was considered inconclusive when 85% of age-predicted maximum HR was not reached. Primary endpoint was a composite of admission for acute coronary syndrome (ACS), coronary revascularization and cardiovascular death during the follow-up.
Results: A total of 141 pts were included (76% male; mean age 60 ± 9 years). ESE was inconclusive in 51 (36%) pts, positive in 11 (8%) and negative in 79 (56%). The mean exercise time of pts with inconclusive ESE was 7 ± 2 minutes and 76% had normal functional capacity. Fatigue (25 pts; 49%) and lower extremities pain (11 pts; 22%) were the main reasons for ESE stopping. Five pts (10%) complained of chest pain during exam. Pts with an inconclusive ESE were more diabetic (inconclusive 43%, positive 9%, negative 13%; p = 0.001), had more chronic obstructive pulmonary disease (COPD) (14%, 0%, 2.5%; p = 0.026), performed more frequently the exam under beta blocker (BB) therapy (59%, 27%, 18%; p = 0.041) and had less ST-segment depression fulfilling electrocardiographic criteria for ischemia (10%, 64%, 27%, p < 0.001). Their functional capacity was worse than negative ESE pts (p < 0.001). During a median follow up of 22 months (IQR 15-27), 13 (9.2%) pts had the primary endpoint, including 5 pts (3.5%) with ACS. Pts with an inconclusive ESE had a lower incidence of the primary outcome than pts with a positive ESE and a higher incidence of events than pts with negative results (Figure). In multivariate analysis, after adjusting for functional capacity and electrocardiographic criteria for ischemia, an inconclusive ESE was an independent predictor of the primary endpoint (HR 9.7, IC95% 1.1-87.6 p = 0.042).
Conclusions: The frequency of inconclusive ESE is not negligible (36%). These pts had more diabetes and COPD and performed the exam under BB therapy more frequently, highlighting the importance of proper patient selection.



PO 9 Figure



ESE results	Unadjusted HR	95%CI	Log rank p
Negative (reference)	-	-	-
Inconclusive	7,8	2,5-25,0	.006
Positive	58,4	6,5-527,9	<.001

P O10 Figure

An inconclusive ESE was associated to a higher risk of cardiovascular events compared to negative ESE.

PO 11. PREDICTORS OF THE PRESENCE OF SEPTAL LATE GADOLINIUM ENHANCEMENT IN FOLLOW-UP CARDIAC MAGNETIC RESONANCE IMAGING AND ITS RELATION TO ACUTE MYOCARDITIS PROGNOSIS

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Hospital Garcia de Orta, EPE.

Introduction: Acute Myocarditis (AM) is usually a benign disease but a minority of patients (pts) develop adverse outcomes. Septal late gadolinium enhancement (S-LGE) is associated with worse prognosis and LGE without oedema in follow-up (FUP) cardiac magnetic resonance imaging (CMR) seems to reflect more permanent lesions.
Objectives: Determine if S-LGE in acute-phase CMR is associated with worse findings in FUP-CMR and if initial laboratory tests help to predict the evolution to permanent lesions.
Methods: Prospective single-centre study of AM pts, diagnosed according to clinical findings, high-sensitivity troponin T (hs-Tn) elevation and CMR criteria (Lake Louise), since 1/2013. Selection of those who underwent acute-phase (CMR-I) and FUP CMR (CMR-II).
Results: Of 88 AM pts, 46 fulfilled our inclusion criteria: median age 31 ± 13 years, 85% males. CMR-I was performed at 6 ± 5 days and LGE was present in 43 pts (93.5%). CMR-II was performed at 8 ± 4.3 months and revealed that in 29 pts (63%) LGE-positive segments improved, 10 pts (21.8%) had stable disease and 7 pts (15.2%) worsened CMR findings. S-LGE was detected in 10 pts (21.7%) in CMR-I and in 6pts (13.0%) in CMR-II. Logistic regression analysis identified S-LGE in CMR-I as a predictor of higher extent LGE in CMR-II (OR 1.4, 95%CI 1.1-1.9, p = 0.020). Although mean values of maximum hs-Tn and C-reactive protein (CRP) were not associated with S-LGE in CMR-I, they were univariate predictors of a higher likelihood of septal involvement in CMR-II: hs Tn (886 vs 1,852 ng/L; OR 1.00, 95%CI 1.00-1.00 p = 0.017) and CRP (4.2 vs 13.9 mg/dL; OR 1.17, 95%CI 1.04-1.33, p = 0.012). After multivariate analysis, CRP was the independent predictor of S-LGE in CMR-II (AUC 80.8, 0.97-0.91, p = 0.012) and a value > 10.2 mg/dL showed a sensitivity and specificity of 83.3% and 85.0%, respectively (Figure). Cardiovascular risk factors, clinical presentation and B-type natriuretic peptide were not predictors of S-LGE in either CMR. In a mean clinical FUP of 757 ± 476days, no patient died, 3 pts (6.5%) developed new-onset heart failure (NYHA class II) and 2 pts (4.3%) ventricular arrhythmias. Due to a small number of adverse events, neither laboratory tests nor S-LGE predicted adverse outcomes.
Conclusions: S-LGE pattern was able to predict higher extent of LGE in FUP-CMR. Increased cardiac biomarkers and inflammatory proteins in acute setting were associated with septal involvement in FUP and can potentially predict the risk of adverse events.

PO 12. CORONARY ARTERY CALCIUM SCORE TO PREDICT CORONARY CT ANGIOGRAPHY INTERPRETABILITY – AN OLD PROBLEM REVISITED

Francisco Albuquerque, Pedro M. Lopes, Pedro Freitas, João Presume, Daniel Gomes, João Abecasis, Sara Guerreiro, Ana Santos, Carla Saraiva, António M. Ferreira

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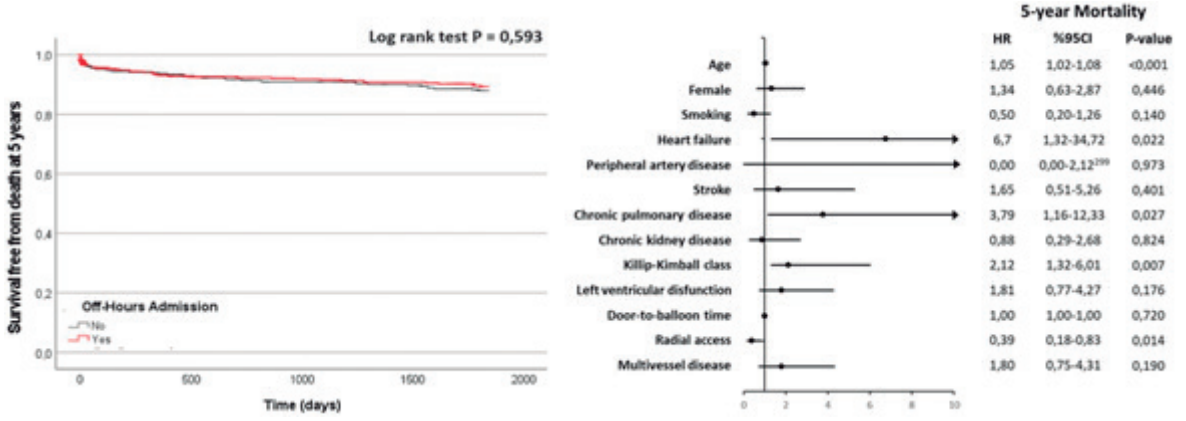
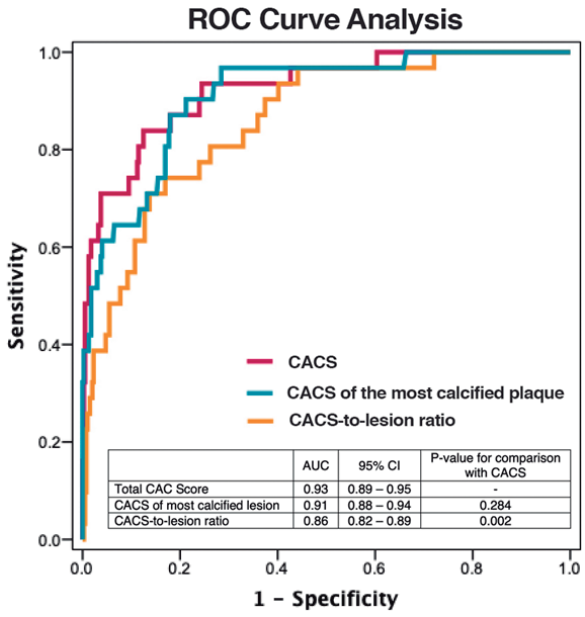
Introduction: Clinical guidelines recommend against the use of coronary computed tomography angiography (CCTA) in patients with heavy



PO 11 Figure

calcification due to interpretability concerns, but no specific approach or threshold is provided. Recently, alternative methods have been proposed as more reliable predictors of CCTA interpretability than the classic coronary artery calcium score (CACS). The purpose this study was to compare the performance of different measures of coronary calcification as predictors of CCTA interpretability.



	AUC	95% CI	P-value for comparison with CACS
Total CAC Score	0.93	0.89 – 0.95	-
CACS of most calcified lesion	0.91	0.88 – 0.94	0.284
CACS-to-lesion ratio	0.86	0.82 – 0.89	0.002

Methods: We conducted a retrospective analysis of consecutive patients undergoing CACS and CCTA between 2018 and 2020. The key exclusion criteria were known coronary artery disease, CACS of zero, and presence of non-assessable coronary lesions for reasons other than calcification (movement/gating artifacts or vessel diameter < 2 mm). CCTA studies were considered non-interpretable if the main reader considered one or more coronary lesions non-assessable due to calcification. Three different measures of coronary calcification were compared using ROC curve analysis: 1) total CACS; 2) CACS-to-lesion ratio (total CACS divided by the number of calcified plaques); and 3) calcium score of the most calcified plaque. Decision-tree analysis was performed to identify the algorithm that best predicts CCTA interpretability.
Results: A total of 432 patients (191 women, mean age 64 ± 11 years) were included. Overall, 31 patients (7.2%) had a non-interpretable CCTA due to calcification. Patients with non-interpretable CCTA had higher CACS (median 589 vs. 50 AU, p < 0.001), higher CACS-to-lesion ratio (median 43 vs. 14 AU/lesion, p < 0.001), and higher score of the most calcified plaque (median 445 vs. 43 AU, p < 0.001). Among the 3 methods, CACS showed the highest discriminative power to predict a non-interpretable CCTA (C-statistic 0.93, 95%CI 0.89-0.95, p < 0.001) (Figure). Decision-tree analysis identified a single-variable algorithm (CACS value ≤ 515 AU) as the best discriminator of CCTA interpretability: 396 of the 409 patients (97%) with CACS ≤ 515 AU had an interpretable CCTA, whereas only 5 of the 23 patients (22%) with CACS > 515 AU had an interpretable test, yielding a total of 96% correct predictions.
Conclusions: The recently proposed and more complex measures of coronary calcification seem unable to outperform total CACS as a predictor of CCTA interpretability. A simple CACS cutoff-value around 500 AU remains the best discriminator for this purpose.

PO 13. CAN WE USE LEFT ATRIAL EJECTION FRACTION (LAEF) TO IDENTIFY DIASTOLIC DYSFUNCTION?

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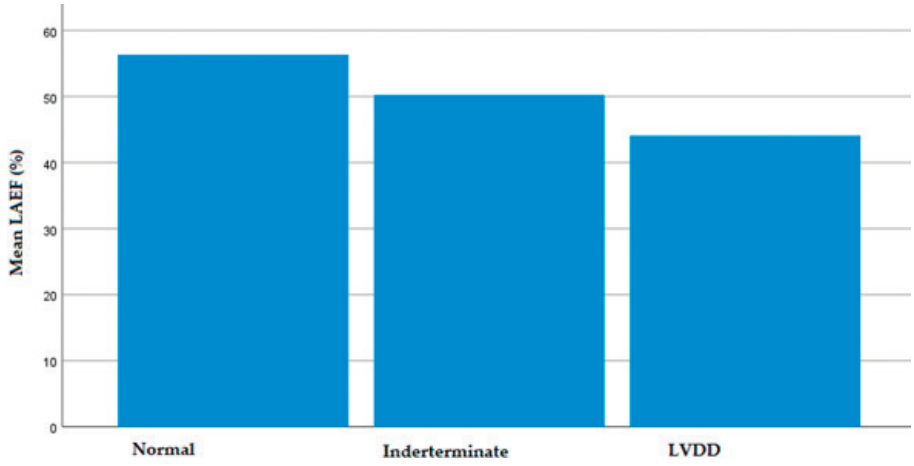
Introduction: The gold standard for assessment of atrial compliance is speckle-tracking echocardiography, but new simpler alternatives have emerged, including the left atrial ejection fraction (LAEF). LAEF has been previously shown to accurately distinguish between patients with and without clearly defined left ventricle diastolic dysfunction (LVDD) by ASE/ESC criteria, but indeterminate cases were excluded. We sought to determine if LAEF could accurately distinguish between indeterminate and LVDD patients.
Methods: A retrospective cohort of 125 patients who underwent transthoracic echocardiography was studied. Doppler peak velocities of passive (MV E) and active filling (MV A) were measured and ratio E/A calculated. Tissue Doppler imaging parameters of peak early (e') of the septal and lateral mitral annulus were measured, and average E/e' ratio (E/e') was calculated. Tricuspid regurgitation velocity, left atrial maximum volume and left atrial minimum volume were measured, allowing calculation of LAEF. Subjects were assigned LVDF categories. ANOVA test was used to compare means between groups and binary logistic regression and ROC curves to access diagnostic accuracy.
Results: LVDD ASE/ESC category distribution was: Normal (n = 22); Indeterminate (n = 40); LVDD (n = 63). Mean LAEF was statistically different between groups (p < 0.001): 56.3% ± 4.5 for normal patients, 50.2% ± 5.5 for indeterminate patients and 44% ± 8.5 for patients with LVDD (Figure). Binomial logistic regression model determined that LAEF distinguished LVDD from indeterminate patients (OR = 1.1, 95%CI 1.05-1.21, p < 0.001). ROC shows that LAEF has good diagnostic accuracy to identify LVDD among indeterminate patients (AUC 0.72, 95%CI 0.62-0.82) and excellent diagnostic accuracy to identify LVDD among normal patients (AUC 0.91, 95%CI 0.84-0.97).



PO 13 Figure

Conclusions: LAEF is a strong predictor of LVDD and does not lose its discriminatory power among indeterminate patients.

PO 14. ANOMALOUS ORIGIN OF THE RIGHT CORONARY ARTERY WITH INTERARTERIAL COURSE: RED FLAG OR INNOCENT BYSTANDER?

Francisco Albuquerque[1], Pedro de Araújo Gonçalves[2], Hugo Marques[2], António M. Ferreira[2], Pedro Freitas[2], Pedro M. Lopes[1], Mariana Gonçalves[1], Hélder Dores[2], Nuno Cardim[2]

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Introduction: Anomalous origin of the right coronary artery (right ACAOS) with an interarterial course has been associated with increased risk of sudden cardiac death (SCD). Widespread use of coronary computed tomographic angiography (CCTA) has led to increasing recognition of this condition, even among apparently healthy individuals. This study sought to examine the prevalence, anatomical characterization and outcomes of right ACAOS with an interarterial course in patients undergoing CCTA for all-indications.
Methods: We conducted a retrospective analysis of consecutive patients referred for CCTA at one tertiary hospital between January 2012 and December 2020. Right ACAOS patients with an interarterial course were assessed for cardiac symptoms (anginal chest pain, syncope, aborted SCD), myocardial infarction, ischemic test results, revascularization and all-cause or cardiovascular (CV) death. CCTAs were reviewed for take-off height and angle, length and severity of proximal narrowing, intramural course, interarterial length and concomitant coronary artery disease (CAD). Patients were divided in two anatomical risk categories according to published literature. Outcomes were evaluated in patients with at least 1 year of follow-up.
Results: Among 10,928 patients referred for CCTA during the study period, we identified 28 patients (0.3% prevalence) with right ACAOS and interarterial course. Mean age was 55 ± 17 years, 64% were male and 10 (36%) presented cardiac symptoms. Only 1 patient underwent surgery. During a median follow-up of 4.3 years, there were no CV deaths and only 1 patient (5%) has experienced an adverse event (syncope of undetermined cause). Clinical and CCTA findings are presented in the table.
Conclusions: Right ACAOS is an uncommon finding, with an observed prevalence of 0.3%. CCTA provides excellent characterization of anatomical features, including the length and severity of proximal vessel narrowing. In a population of predominantly asymptomatic patients who survived this condition well into adulthood, the risk of events was very low and medical follow up might be a reasonable option.

PO 15. DOES THE GENDER INFLUENCE IN MITRAL VALVE PROLAPSE CLINICAL PRESENTATION?

Ana Margarida Martins, Joana Rigueira, Tiago Rodrigues, Nelson Cunha, Sara Couto Pereira, Pedro Silvério António, Pedro Alves da Silva, Beatriz Valente da Silva, Joana Brito, Beatriz Garcia, Catarina Oliveira, Luís Brás Rosário, Rui Plácido, Cláudio David, Fausto J. Pinto, Ana G. Almeida

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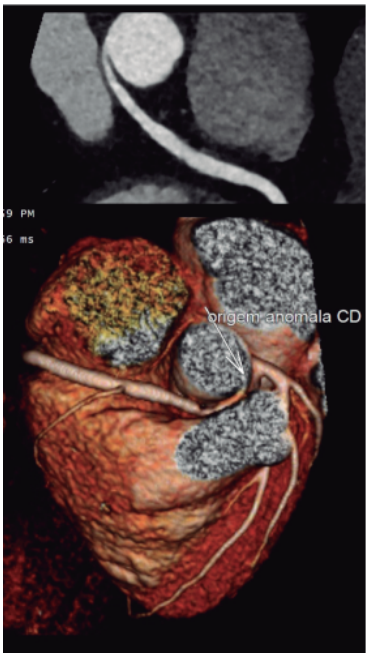
Introduction: The impact of gender in mitral valve prolapse (MVP) is not clearly defined with some contradictory findings published.
Objectives: To evaluate gender differences in clinical characteristics, predictors of events and outcomes in patients (pts) with MVP.
Methods: Single-center retrospective study of consecutive pts with MVP found in transthoracic echocardiogram from January 2014-October 2019. MVP was defined according to 2017 AHA recommendations, the ESC classification considering the leaflet tip position was also evaluated. Demographic, clinical, echocardiographic, ECG data were collected, as well as adverse events at follow-up (FUP). The results were obtained using χ^2 and Student-t tests, logistic regression and Receiver Operator Curve.
Results: 247 pts were included (mean age 63 ± 18 years, 61% male). According to ESC classification, the frequency of prolapse was similar between men and women (61 vs 59%, p = NS), flail was more common in men (16 vs 6%, p = 0.028) and billowing in women (35% vs 22%, p = 0.04). Male pts had more aortic dilatation (83 vs 14%, p = 0.001), interventricular septum (10.8 ± 1.8 mm vs 9.5 ± 1.7 mm) and posterior wall thickness (10.4 ± 1.8 mm vs 9.0 ± 1.7 mm) (both p < 0.001). Also, in ECG there were differences between gender, with men having more intraventricular conduction disturbances (p = 0.014) and higher QRS duration (104 ± 24 ms vs 99 ± 20 ms, p = 0.008). There were no statistically significant differences in death, mitral intervention or arrhythmias during the 30 ± 19 months of FUP. Predictors of mitral intervention differed between gender: in men the maximum leaflet displacement of MVP was an independent predictor (OR = 1.345, CI 1.129-



	All patients (n=28)	High-Risk* (n=8)	No-High Risk (n=20)	p-value
Clinical findings				
Age, years, mean ± SD	55 ± 17	48 ±14	58 ± 18	0.189
Male, n (%)	18 (64.3)	6 (75.0)	12 (60.0)	0.454
Hypertension, n (%)	18 (64.3)	5 (62.5)	13 (65.0)	0.901
Diabetes mellitus, n (%)	5 (17.9)	0 (0.0)	5 (25.0)	0.119
Hyperlipidaemia, n (%)	17 (60.7)	4 (50.0)	13 (65.0)	0.463
Current or prior smoker, n (%)	2 (7.1)	1 (12.5)	1 (5.0)	0.485
Family history early CAD, n (%)	5 (17.9)	2 (25.0)	3 (15.0)	0.533
Known CAD, n (%)	3 (10.7)	0 (0.0)	3 (15.0)	0.246
CV symptoms, n (%)	10 (35.7)	2 (25.0)	8 (40.0)	0.454
Anatomical features on CCTA				
*Proximal vessel morphology				
Oval (< 50% narrowing)	18 (64.3)	0 (0.0)	18 (90.0)	0.001
Slit-like (≥ 50% narrowing)	10 (35.7)	8 (100.0)	2(19.0)	
*Length of narrowing, mm	18.6 ± 7.0	23.9 ± 3.0	16.1 ± 6.9	0.006
Interarterial course, mm	12.4 ± 5.0	11.1 ± 5.2	15.0 ± 3.3	0.067
Acute angle take-off < 45º, n (%)	22 (78.6)	8 (100.0)	14 (70.0)	0.081
Intramural, n (%)				
Not present	19 (67.9)	4 (50.0)	15 (75.0)	0.201
Present	9 (32.1)	4 (50.0)	5 (25.0)	
Take-off level above STJ, n (%)	18 (64.3)	6 (75.0)	12 (60.0)	0.454
Any CAD ≥ 50% stenosis, n (%)	3 (10.7)	0 (0.0)	3 (100.0)	0.246

* High-Risk defined as proximal vessel narrowing ≥50% and a length of narrowing > 15 mm

PO 14 Figure

1.605, p = 0.001) with a low-moderate capacity of prediction (AUC 0.68, p = 0.001); best cut-off was 7.5 mm (Sens = 62%, Spec = 70.5%). On the other hand, in women, the cQT interval was a predictor of mitral intervention (OR = 1.02, CI 1.001-1.04, p = 0.049) with a moderate prediction capacity (AUC 0.74 p = 0.004); best cut-off was 416 ms (Sens = 81%, Spec = 65%). In men, the presence of billowing (OR = 7.3, CI 1.2-42.7, p = 0.028) and RBBB (OR = 12.9, CI 1.9-89.4 p = 0.009) were independent predictors of death. In women the presence of LBBB (OR = 26.7, CI 1.58-450.9, p = 0.023) was an independent predictor of death. In men, flail (OR = 1.04, CI 1.01-1.07, p = 0.002), LV mass (OR = 1.02, CI 1.01-1.03, p = 0.004) and age (OR = 1.04, CI [1.01-1.07], p = 0.002) were independent predictors of arrhythmias during follow-up, and the QTc interval was a predictor of atrial fibrillation (OR = 1.02, CI 1.004-1.041, p = 0.015) and this was not true for women.
Conclusions: In our study, MVP was more common in men. Males had more flail, aortic dilatation and interventricular conduction disturbances. Billowing was more common in women. The clinical phenotype of pts with MVP seems differ between gender, however, here these differences had no impact in the prognosis.

PO 16. MITRAL ANNULUS DISJUNCTION: IS IT A MARKER OF OMINOUS PROGNOSIS?

Catarina Simões de Oliveira[1], Joana Rigueira[2], Tiago Rodrigues[2], Nelson Cunha[2], Pedro Silvério António[2], Sara Couto Pereira[2], Joana Brito[2], Beatriz Valente Silva[2], Pedro Alves da Silva[2], Beatriz Garcia[2], Ana Margarida Martins[2], Cláudio David[2], Fausto J. Pinto[2], Ana Almeida[2]

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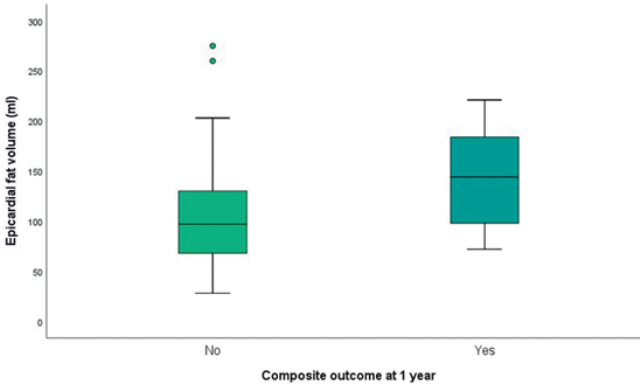
Introduction: Mitral annulus disjunction (MAD) has been proposed as a contributing factor for arrythmias and mitral regurgitation in patients (pts) with mitral valve prolapse (MVP), however its clinical relevance is still under investigation.
Objectives: To evaluate the prevalence of MAD in MVP pts, to characterize clinically patients with MAD and assess potential markers for events.
Methods: Single-center retrospective study of consecutive patients with MVP documented in transthoracic echocardiogram between January 2014 and October 2019. MVP was defined according to the 2017 AHA recommendations; MAD was defined as a separation between mitral valve annulus and the left ventricle free wall. Demographic, clinical, echocardiographic, electrocardiographic data were collected. The results were obtained using chi-square and Mann-Whitney tests; logistic regression was used to find predictors of events.
Results: Two hundred forty seven pts were included (mean age 62.9 ± 18 years, 61% males), MAD was present in 23 (9.3%), (mean age 56 ± 20 years, 56.5% males). The maximum diameter of MAD was 10 ± 3 mm (range 5-18), mitral regurgitation was present in 21 patients (92.3%), at least of moderate severity in 65.2% pts. Most of the patients (91.3, n = 21) were in sinus rhythm (SR). During follow-up (FUP) of 29 ± 19 months, 39% (n = 9) pts developed symptoms, 22% (n = 5) developed atrial fibrillation (AF), 4.3% (n = 1) had acute aortic syndrome (AAS), 4.3% (n = 1) required ICD implantation, 22% (n = 5) undergone mitral valve intervention, 8.7% (n = 2) were hospitalized and 8.7% (n = 2) died. None of the patients presented sustained ventricular arrhythmias (SVA) assessed by regular Holter monitoring. Patients with MAD developed more AAS and required more ICD implantation in FUP when compared to patients without MAD (p = 0.007 and p = 0.006, respectively). Mitral cord rupture (p = 0.04), age (p = 0.044), maximum velocity of tricuspid regurgitation (p = 0.04) and interventricular septum (IVS) thickness (p = 0.017) were associated with AF in MAD patients. On univariate analysis, IVS thickness was a predictor of AF in this subgroup (OR 4.0, 95%CI 1.1-14.3, p = 0.032). Presence of SR predicted survival (p = 0.03). No predictors of hospital admission or mitral intervention were found.
Conclusions: Patients with MAD had a relatively benign prognosis with few events during follow-up, although with more AAS and ICD in FUP. In our sample, AF was more common than SVA. Left ventricle hypertrophy was a predictor of AF and sinus rhythm was associated with survival. Larger studies with more patients and other methods of imaging are needed to confirm our results.

PO 17. EPICARDIAL FAT VOLUME IMPROVES PREDICTION OF ADVERSE CLINICAL EVENTS

José Viegas, Tânia Branco Mano, João Pedro Reis, Rúben Ramos, António Fiarresga, Duarte Cacela, Hugo Marques, Luísa Figueiredo, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Recent studies have demonstrated the potential of epicardial fat volume (EFV) to predict obstructive coronary artery disease (CAD), however its impact in clinical outcomes remains elusive.
Objectives: To assess the association between EFV and demographic and morphometric data, coronary atherosclerotic burden and adverse events in a population of patients (pts) referred for coronary computed tomography angiography (CTA).
Methods: Retrospective analysis of pts without known CAD referred for coronary CTA in a single tertiary care centre. A standardized protocol for quantification of EFV, thoracic fat volume (TFV), coronary artery calcification (CAC) and coronary angiography was performed. Endpoint was composite of cardiovascular death, nonfatal myocardial infarction and unplanned hospitalization leading to revascularization at 12 months.
Results: 72 pts were included, 58% male, mean age 67 ± 9 years. The prevalence of hypertension, dyslipidemia and diabetes was 75%, 82% and 24%, respectively. Median EFV was 101 (68) ml and total TFV 1504 (694) ml. EFV was directly related with age (p < 0.001), male sex (p < 0.001), body mass index (p = 0.008) and TFV (p = 0.025). A positive correlation with CAC and a significant association with CAD and obstructive CAD were demonstrated. Composite endpoint was observed in 13 pts (18%). After adjusting for all considered confounders, EFV remained an independent predictor of adverse events.



Conclusions: EFV positively relates to coronary atherosclerotic burden. This study also advocates that EFV may improve risk stratification for clinical outcomes. Larger studies are required to evaluate these results.

Virtual Posters | Posters - D. Heart Failure

PO 19. CLINICAL PREDICTORS OF IN-HOSPITAL MORTALITY IN PATIENTS ADMITTED WITH ACUTE HEART FAILURE IN AN INTENSIVE CARE DEPARTMENT

Ana Rita Moura[1], Marta Reina-Couto[2], Roberto Roncon de Albuquerque[2], José Artur Paiva[2]

[1]Hospital Distrital de Santarém, EPE. [2]Centro Hospitalar de S. João, EPE.

Introduction: Heart failure (HF) is one of the major contemporary clinical challenges. Its prognosis is worse in the presence of exacerbations that

require intensive care. Data regarding predictors of short-term prognosis of critical acute heart failure (AHF) in the contemporary era is lacking.
Objectives: to identify independent clinical predictors of in-hospital mortality in this subgroup of patients.
Methods: Retrospective study of patients admitted at an ICU with the diagnosis of AHF between January and December of 2018 in a tertiary care hospital. Multivariable logistic regression analysis corrected for age, co-morbidities, clinical presentation severity and therapeutic measures was performed for in-hospital mortality.
Results: 239 patients were included, predominantly men (60.7%), with a mean age of 69.5 ± 14.8 years old. A high burden of cardiovascular risk factors was present and the majority didn't have a previous known HF diagnosis (59.9%). Ischaemic disease was the most prevalent underlying cause (27.6%) and acute coronary syndrome was the most common *trigger* (35.6%). Mean ejection fraction was 37.5 ± 16.9%. Mechanical circulatory support (MCS) was needed in 9.6% of the patients. Mean length of hospitalization was 5.6 ± 6.0 days and in-hospital mortality rate was 18.9% (n = 44). Cardiogenic shock unresponsive to the therapeutic measures (54.5%) and septic shock (20.5%) were the main causes of death. In-hospital mortality was higher in male patients (75.0% vs. 25.0%; p = 0.03), who presented with sudden cardiac arrest (SCA) and cardiogenic shock (p < 0.001); who required MCS (p < 0.001) and evolved with a nosocomial infection (p = 0.006); it was positively correlated with SAPS II score (p < 0.001) and negatively correlated with LVEF (p = 0.002). In a multivariable logistic regression analysis MCS, older age and SCA at presentation were the only parameters with significant correlation with this outcome.
Conclusions: in the face of the need to manage limited resources, aspect that acquires more relevance in an intensive care scenario, identification of mortality predictors in critical AHF is relevant in order to develop risk scoring systems that allow to adequately select patients with a higher probability of survival. In our registry, age and severity of clinical presentation in terms of hemodynamic impact were the most robust variables to predict in-hospital mortality, more than previous known co-morbidities. Specifically, it draws attention to the need of careful analysis in larger studies of the subgroup of patients with SCA at admission to identify those in which intensive care measures will be superfluous to apply. It also highlights the relevance of taking measures to prevent nosocomial infection that assumes an important role in the mortality of these patients.

PO 20. BNP PERCENTAGE DECREASE DURING HOSPITALIZATION AND ITS PROGNOSIS IN HEART FAILURE

Joana Maria Laranjeira Correia[1], Inês Pires[2], Luísa Gonçalves[1], Vanda Neto[1], João Miguel Santos[1], Gonçalo Ferreira[1], António Costa[1], José Costa Cabral[1]

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[2]*Centro Hospitalar de S. João, EPE.*

Introduction: Heart failure (HF) is an increasing problem for global healthcare systems and the endpoint of a variety of cardiovascular diseases. HF is a frequent cause of hospitalization, especially in the elderly. It is likely that the increasing burden of this disease will continue to pose challenges for modern healthcare. Several studies demonstrate that natriuretic peptides, such as BNP, are independent predictors of mortality.
Objectives: To analyse the BNP values at admission and at discharge of patients hospitalized due to acute HF and to evaluate the relationship between BNP decrease during hospitalization and and two outcomes: mortality and rehospitalization during a follow-up of 24 months.
Methods: A retrospective study of all consecutive patients admitted in the cardiology service with the diagnosis of acute HF was conducted. BNP percentage decrease during hospitalization was compared between the patients who died and patients who survived during the following time intervals: hospitalization, on a 3, 6, 12 and 24-month follow-up. BNP percentage decrease during hospitalization was also compared between the patients who were re-hospitalized and patients who were not re-hospitalized during the following time intervals: on a 3, 6, 12 and 24-month follow-up. Statistical analysis was performed in SPSS and a p value < 0.05 was considered statistically significant.
Results: 419 patients were included in the study; 53.7% were male and the mean age was 77.03 ± 10.71 years. Intra-hospital mortality was 2.8%. The 24-month mortality and readmission rate were, respectively, 10.8% and 40%. Comparing the BNP percentage decrease of the patients who survived and the patients who died, a, a statistically significant difference was found during hospitalization (34.30 ± 44.36 vs 7.64 ± 49.57, p = 0.041) and on a 3-month follow-up (37.55 ± 42.53 vs 13.60 ± 55.78, p = 0.015). No statistically significant difference was found at 6 months (37.74 ± 42.76 vs 21.43 ± 52.98, p = 0.059), at 12 months (39.23 ± 40.59 vs 26.06 ± 48.59, p = 0.063) and at 24 months (38.14 ± 40.99 vs 30.06 ± 47.44, p = 0.234). Comparing the BNP percentage decrease of the patients who were not re-hospitalized and the patients who were re-hospitalized no statistically significant difference was found at 3 months (38.10 ± 43.49 vs 28.33 ± 44.02, p = 0.093), at 6 months (37.79 ± 44.48 vs 32.90 ± 42.06, p = 0.351), at 12 months (39.28 ± 43.08 vs 35.22 ± 39.43, p = 0.384) or at 24 months (36.77 ± 44.70 vs 37.62 ± 38.87, p = 0.852).
Conclusions: In this population, the BNP percentage decrease during hospitalization was associated with a reduction in short-term mortality (in-hospital and 3-month mortality), a correlation that was not observed with long-term mortality and with the rate of re-hospitalization. Thus, BNP decrease can be a tool in the daily practice to identify patients who benefit from an earlier reevaluation and therapeutic optimization after discharge.

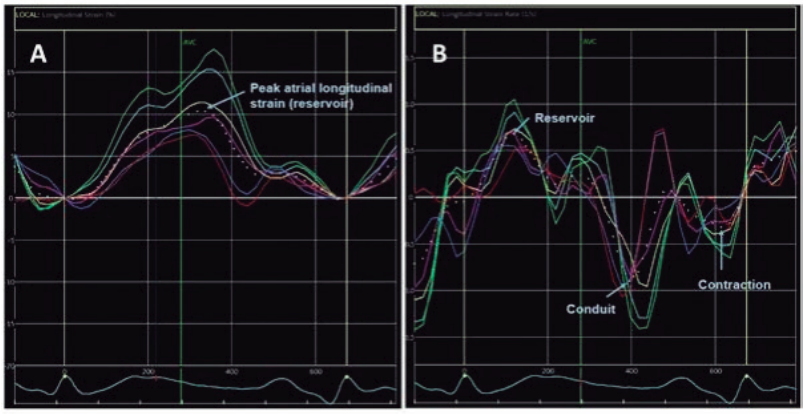
PO 21. ASSESSING LEFT ATRIAL AND LEFT VENTRICULAR STRAIN IMAGING: IS THERE AN IMPROVEMENT OF ATRIAL AND VENTRICULAR FUNCTION WITH SACUBITRIL/VALSARTAN?

Pedro Garcia Brás, António Valentim Gonçalves, Luísa Moura Branco, Rita Ilhão Moreira, Tiago Pereira da Silva, Pedro Rio, Tânia Mano, João Pedro Reis, Alexandra Castelo, Vera Ferreira, Ana Galrinho, Ana Teresa Timóteo, Ana Leal, Fernanda Varela Gameiro, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Strain imaging is an effective tool in the evaluation of left atrial (LA) and left ventricular (LV) function with increasing clinical value. There is limited data regarding assessment of myocardial strain in heart failure with reduced ejection fraction (HFrEF) patients (P) under sacubitril/valsartan (SV). The aim of this study was to evaluate changes in LA and LV strain imaging before and after 6 months of SV therapy in HFrEF P.
Methods: Prospective evaluation of echocardiographic data in HFrEF P under guideline-directed medical therapy. LA and LV parameters were assessed by 2D speckle-tracking at baseline and after 6 months of SV therapy. LA volume index (LAVi), LA longitudinal strain in reservoir phase (LASr), conduit phase (LAScd), contraction phase (LASct) and respective phases' strain rate (SR) as well as LV end-diastolic diameter (LVDD), LV longitudinal, radial and circumferential strain and SR were compared.
Results: 35 P, mean age 59 ± 11 years, 83% male, 40% with atrial fibrillation, 43% with ischemic etiology, a mean NYHA class of 2.5 ± 0.6 and a baseline mean LV ejection fraction (EF) of 29 ± 6%. There was a significant reduction of LAVi (52 ± 23 mL/m^2 vs. 44 ± 16 mL/m^2, p = 0.004) after 6 months of SV therapy as well as improvement of LA reservoir function (LASr 11.48 ± 6.15% vs. 16.09 ± 7.8% p < 0.001), LA conduit function (LAScd -6.25% [IQR 4.14] vs. -7.35% [IQR 6.4], p = 0.003) and LA contraction function (LASct -7.15 ± 4.09% vs. -10.87 ± 3.86% p < 0.001) in addition to reservoir SR (0.49 ± 0.22 s^{-1} vs. 0.65 ± 0.22 s^{-1}, p < 0.001), conduit SR (-0.47 s^{-1} [IQR 0.39] vs. -0.58 s^{-1} [IQR 0.48], p = 0.018) and contraction SR (-0.82 s^{-1} [IQR 0.67] vs. -1.08 s^{-1} [IQR 0.54], p = 0.018). After 6 months of SV therapy, there was a significant reduction of LVDD (71 ± 8 mm vs. 67 ± 8 mm, p = 0.001), and improvement of LVEF (29 ± 6% vs. 35 ± 9%, p = 0.001) and longitudinal LV function: global longitudinal strain (-7.0 ± 2.6% vs. -8.9 ± 2.8%, p = 0.001), systolic strain rate (SRs) (-0.32 ± 0.11 s^{-1} vs. -0.47 ± 0.14 s^{-1}, p < 0.001), early diastolic strain rate (SRe) (0.25 s^{-1} [IQR 0.23] vs. 0.46 s^{-1} [IQR 0.35], p < 0.001) and late diastolic strain rate (SRa) (0.31 ± 0.17 s^{-1} vs. 0.44 ± 0.19 s^{-1}, p = 0.002). Regarding radial LV function, there was a significant difference in peak radial strain (5.87% [IQR 4.9] vs. 11.74% [IQR 6.98], p < 0.001); SRs (0.66 ± 0.26 s^{-1} vs. 0.90 ± 0.30 s^{-1}, p = 0.001) and SRe (-0.54 ± 0.48 s^{-1} vs. -0.95 ± 0.72 s^{-1}, p = 0.001). Furthermore, P showed improved circumferential LV function after SV therapy: peak circumferential strain (-7.65 ± 2.30% vs. -9.93 ± 2.46%, p = 0.001), SRs (-0.78 s^{-1} [IQR 0.39] vs. -0.87 s^{-1} [IQR 0.37], p = 0.026) and SRa (0.48 s^{-1} [IQR 0.44] vs. 0.59 s^{-1} [IQR 0.32], p = 0.041) (Figures).

Figure 1: Left atrial longitudinal strain

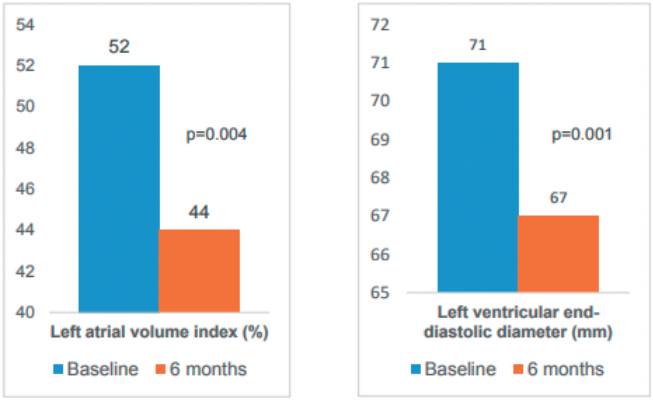


A: Measurement of peak atrial longitudinal strain (reservoir phase)

B: Measurement of left atrial longitudinal strain rate

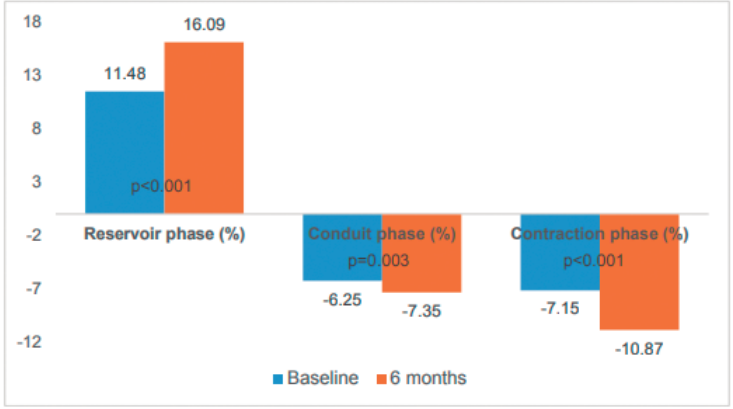
PO 21 Figure 1

Figure 2: Evaluation of left atrial volume index and left ventricular end-diastolic diameter



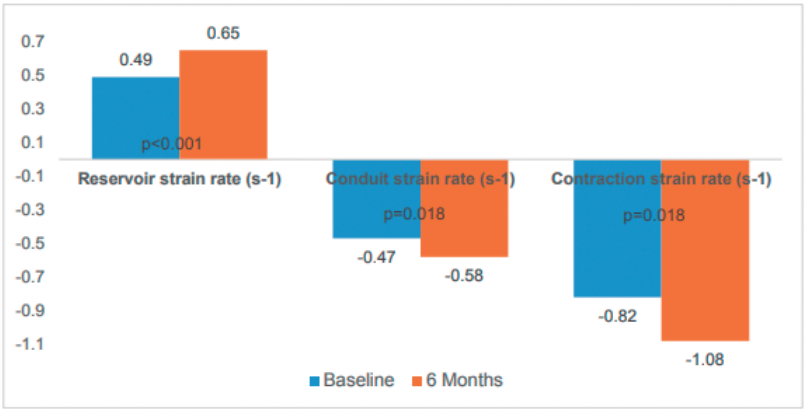
PO 21 Figure 2

Figure 3: Evaluation of left atrial longitudinal strain



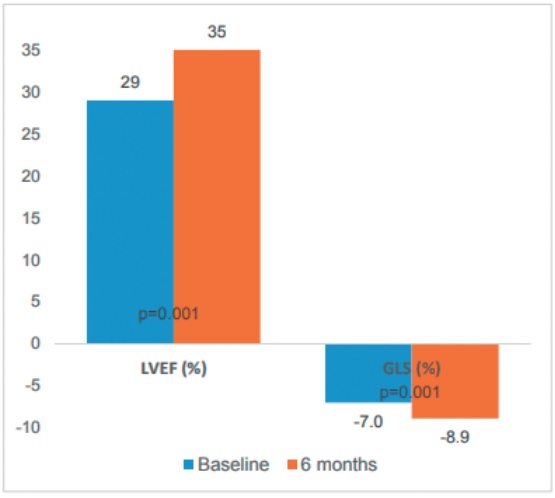
PO 21 Figure 3

Figure 4: Evaluation of left atrial longitudinal strain rate (reservoir phase, conduit phase and contraction phase)



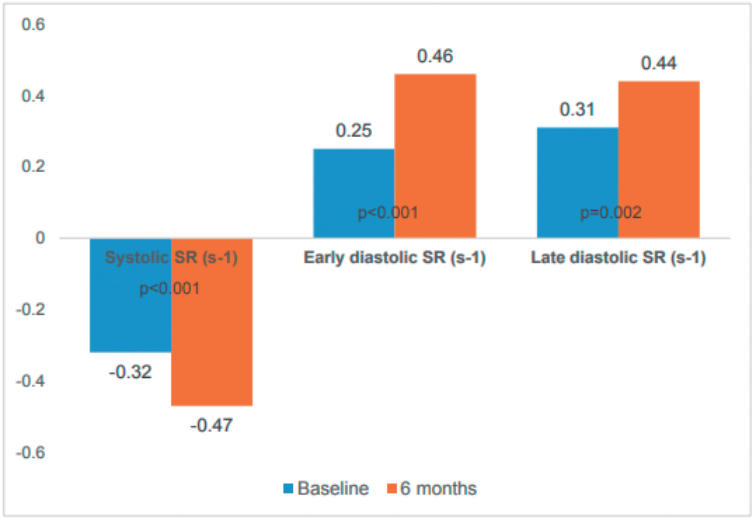
PO 21 Figure 4

Figure 5: Evaluation of left ventricular ejection fraction (LVEF) and global longitudinal strain (GLS)



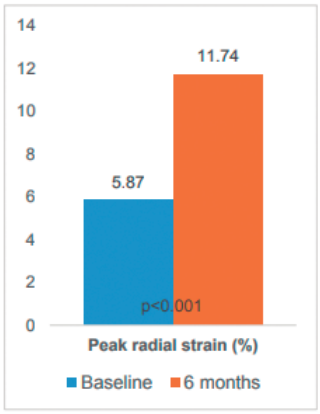
PO 21 Figure 5

Figure 6: Evaluation of left ventricular longitudinal strain rate



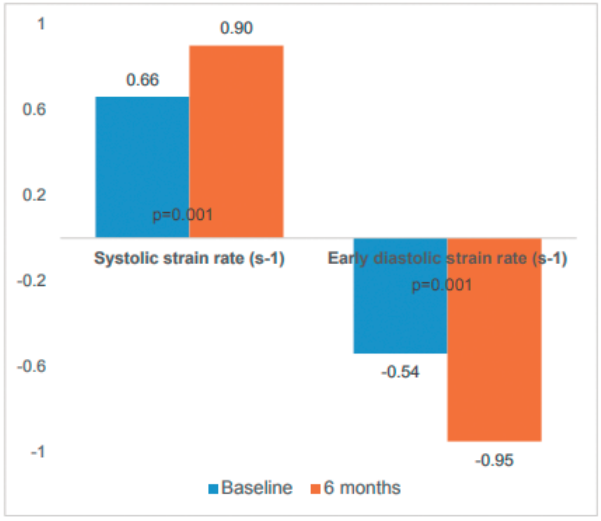
PO 21 Figure 6

Figure 6: Evaluation of left ventricular peak radial strain



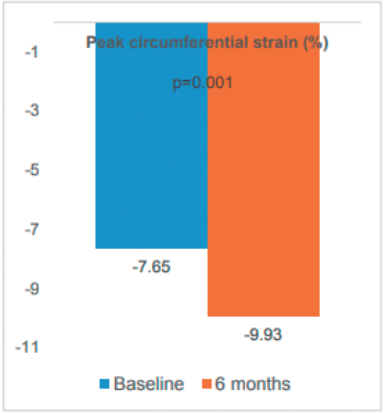
PO 21 Figure 7

Figure 7: Evaluation of left ventricular radial strain rate



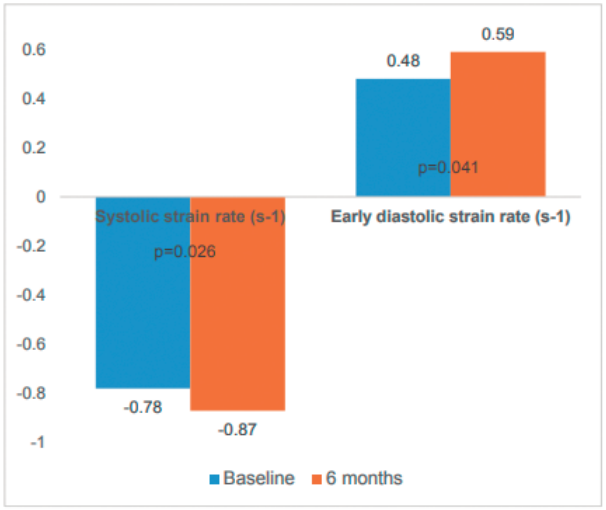
PO 21 Figure 8

Figure 8: Evaluation of left ventricular peak circumferential strain



PO 21 Figure 9

Figure 9: Evaluation of left ventricular circumferential strain rate



PO 21 Figure 10

Conclusions: After 6 months of sacubitril/valsartan therapy in HFrEF P there was a significant improvement of LA longitudinal strain as well as LV systolic function, with improved longitudinal, radial and circumferential strain parameters.

PO 22. SACUBITRIL/VALSARTAN REAL-WORLD PERSISTENCE USING A COHORT OF HEART FAILURE PATIENTS FROM THE PRESCRIPTION & MONITORING OF SACUBITRIL/VALSARTAN STUDY (PRIME 2 STUDY)

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Objectives: The primary objective of this study was to characterize the real-world persistence of sacubitril/valsartan (sac/val) at 12 months.
Methods: This was a cross-sectional study of patients with a sac/val prescription originally identified in Portuguese community pharmacies using primary and secondary data collection. PRiMe study participants (≥ 18 years heart failure patients or caregivers) who gave their consent to participate in the follow-up PRiMe 2 study answered a telephone-based questionnaire. Whenever it was unfeasible to reach patients, pharmacists were contacted to support with data collection. Persistence was measured as the proportion of patients continuing therapy with sac/val after 12 months. Functional status was measured through the self-assessed New York Heart Association (NYHA) questionnaire.
Results: As of Aug 2020, amongst the 285 patients recruited for PRiMe, we were able to collect sac/val persistence data for 284 patients. The median age of patients was 72 years (IQR = 63-80), 65.5% were male and the median follow-up was 19.6 months (IQR = 14.8-23.9). The estimated persistence of sac/val at 12 months was 85.96% and varied across different sac/val initiating doses (p = 0.22). In the majority of cases, sal/val discontinuation occurred in the first 180 days of treatment. Persistence at 12 months among patients < 75 years was higher when compared to patients ≥ 75 years (p = 0.0316). After a median time of 16.6 months (IQR, 12.5-19.3) of sac/val treatment, 42.7% of patients improved their self-assessed NYHA while 48.5% did not report heart failure signs and symptoms' progression and maintained their self-assessed NYHA.
Conclusions: Our findings suggest that sac/val real-world persistence at 12 months was high and that heart failure patients on treatment with sac/val tend to improve their self-reported functional status.

PO 18. REAL-WORLD IMPACT OF SACUBITRIL/VALSARTAN ON THE QUALITY OF LIFE OF HEART FAILURE PATIENTS

Marta Nogueira[1], Marta Afonso-Silva[2], Valeska Andreozzi[3], Björn Vandewalle[3], Fernanda Ferreira[1], Lurdes Mónica[1], Liliana Cruz[1], Madalena Guimarães[1], Gonçalo Proença[1]

[1]Hospital de Cascais. [2]Novartis Farma, Produtos Farmacêuticos S.A.. [3]Exigo Consultores.

Introduction: Although in PARADIGM-HF trial sacubitril/valsartan has demonstrated to improve quality of life (QoL) versus enalapril, in heart failure with reduced ejection fraction (HFrEF), there is still limited evidence in real world settings.
Objectives: Assess the impact of sacubitril/valsartan on the QoL of real world HFrEF patients.
Methods: Data from a prospective cohort of patients followed in a Portuguese HF clinic were analysed. QoL was assessed by the Kansas City Cardiomyopathy Questionnaire (KCCQ) administered at each medical visit. KCCQ scores in percentage range from 0 to 100, with higher scores meaning better QoL. Included patients had a diagnosis of HF, started sacubitril/valsartan between Nov/2017-Oct/2019 and had at least one KCCQ assessment at any time point during the first year of sacubitril/valsartan treatment. A linear mixed-effects model was used to estimate the mean KCCQ score and mean change from baseline at each visit. The proportion of patients with clinically meaningful improvements in KCCQ score, defined as an increment of at least five points, and stable patients, defined as either an increase or decrease below five points, were also computed.
Results: Eighty patients met inclusion criteria and were analysed. The mean age of patients was 72.1 (standard deviation [SD]: 10.7) years and the majority were male (70.0%). Most patients had hypertension (66.2%), 47.5% had atrial fibrillation and 36.2% diabetes. The mean baseline left ventricular ejection fraction was 32.1% (SD: 6.5) and 61.0% were New York Heart Association (NYHA) II patients. Over 12 months of follow-up, the mean estimated KCCQ score showed a trend towards improvement, from 70.1, at baseline, to 72.9 at 12 months. Mean change from baseline at 12 months was 2.4 (standard error: 4.6). Among patients with available data at 12 months, 44.4% showed a clinically meaningful improvement compared with baseline, while 33.3% had stable KCCQ scores.
Conclusions: Sacubitril/valsartan is suggested to generate considerable improvements in quality of life of HF patients in a real-world setting in Portugal. These results reinforce the positive trends already observed in previous studies.

PO 23. SUPERRESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY: CLINICAL OUTCOMES AND PREDICTORS

Mariana S. Brandão[1], João Gonçalves Almeida[1], Paulo Fonseca[1], Joel Monteiro[2], Filipa Rosas[1], Elisabeth Santos[1], José Ribeiro[1], Marco Oliveira[1], Helena Gonçalves[1], João Primo[1], Ricardo Fontes-Carvalho[1]

[1]Centro Hospitalar de Vila Nova de Gaia/Espinho. [2]Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Introduction: Resynchronization therapy (CRT) reduces mortality in selected patients with heart failure with reduced ejection fraction (HFrEF). Patients that experience significant reverse remodelling and left ventricular (LV) ejection fraction (LVEF) improvement have been called "superresponders".
Objectives: To describe a cohort of superresponders and identify predictors of superresponse to CRT.
Methods: Single-center retrospective study of consecutive patients submitted to CRT implantation (2007-2018). Superresponse was defined as LVEF≥ 50% during the 1st year of follow-up (FU). Major adverse cardiac events (MACE) included heart failure hospitalization or all-cause mortality. Multivariate logistic regression was performed to identify predictors of superresponse. Survival analysis with Kaplan-Meier method and *Log-rank* test was performed to compare outcomes between superresponders and non-superresponders.
Results: 295 CRT patients (70.5% male, mean age 67 ± 11 years) were included. Fifty-nine (21.4%) patients were superresponders. Superresponders were more often female (42.4% vs 25.8%, p = 0.021), tended to be older (69.6 vs 66.7 years, p = 0.054) and had lower rates of coronary disease (17.2% vs 32.9%, p = 0.032), atrial fibrillation (20.3% vs 38.0%, p = 0.018), valve disease (13.6% vs 30.0%, p = 0.018) and chronic kidney disease (6.9% vs 26.0%, p = 0.003). Superresponders had higher rates of non-ischemic HF (88.1% vs 69.1%, p = 0.006) and were more often implanted with CRT-P (69.5% vs 37.8%, p < 0.001). HFrEF medication did not differ between groups. Superresponders had lower baseline LV end-systolic volumes (115.5 vs 166.2 ml, p < 0.001) and N-terminal pro B-type natriuretic peptide (NT-proBNP) values (1,232.6 vs 5,252 pg/ml, p < 0.001). Baseline QRS duration did not differ (171.7 vs 171.3 ms, p = 0.883). During a median FU of 3 ± 5 years, there were no differences in terms of ventricular arrhythmias (5.3% vs 6.8%, p = 0.913) or appropriate defibrillator therapies (1.8% vs 6.8%, p = 0.147) between groups. In addition to LVEF improvement (53.7% vs 35.3%, p < 0.001), superresponders also showed higher tricuspid annular plane systolic excursion values (22.1 vs 19.8 mm, p = 0.004) during FU. MACE occurred less frequently (*Log-rank* test, p = 0.003) and all-cause mortality (*Log-rank* test, p < 0.001) was lower in superresponders. Multivariate analysis identified female gender (odds ratio [OR] 5.7, 95% confidence interval [CI] 1.03-31.73, p = 0.045), older age (OR 1.1, 95%CI 1.02-1.24, p = 0.017) and lower baseline NT-proBNP (OR 0.9, 95%CI 0.99-1.00, p = 0.011) as independent predictors of superresponse to CRT.
Conclusions: In superresponders, in addition to a significant improvement in LVEF, we observed an improvement in right ventricular function. As expected, MACE and all-cause mortality were lower. Female gender, older age and lower baseline NT-proBNP predicted super-response to CRT.

PO 24. AHFM SCORE, A PREDICTIVE MODEL OF IN-HOSPITAL AND LONG-TERM MORTALITY IN HEART FAILURE

João Miguel Santos, Inês Pires, Vanda Neto, Joana Correia, Luísa Gonçalves, Inês Almeida, Emanuel Correia

Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio, EPE.

Introduction: Patients hospitalized due to heart failure (HF) constitute a heterogeneous population whose prognosis is difficult to forecast. The purpose of this study was to create a model based on simple bedside recordable echocardiographic, analytical and objective clinical parameters that could accurately predict mortality and/or rehospitalization risk in different stages of HF course.
Methods: A retrospective analysis of 347 patients admitted to a Cardiology ward due to decompensated HF was performed. The echocardiographic variables pulmonary artery systolic pressure (PSAP) and E/e' ratio, and the analytical/clinical variables systolic blood pressure (SBP), urea and brain natriuretic peptide (BNP) were selected for inclusion. Subgroups were created for each variable and an *odds ratio* (OR) for the risk of in-hospital mortality (IHM) was calculated. A numerical value proportional to the OR was attributed to each subgroup. A score was created, ranging from 0-47 points, corresponding to the sum of the classification attributed to each variable. ROC curve analysis was used to assess predictive value of the score for IHM. Kaplan-Meyer and Cox-regression plots were used to assess mortality (24MM) and the composite endpoint of HF rehospitalization or death at 24 months (24HM).
Results: Mean patient age was 78 (± 9) years; 51% were men. Score variable means were - PSAP: 47 (± 15) mmHg; E/e': 16.8 (± 7.8); SPB: 138 (± 31) mmHg; Urea: 71 (± 35) mg/dl; BNP: 911 (± 995) pg/ml. Mean ejection fraction (EF) was 48% (± 16). 35% of patients had EF< 40%. IHM, 24MM and 24HM were 3.5%, 17.1% and 63.6%, respectively. A statistically significant association between IHM and PSAP, E/e´, BNP, urea and SBP ($p < 0.05$) was found on univariate analysis. ROC curve analysis of AHFM revealed an AUC of 0.785 (p = 0.001) for IHM risk prediction. The cut-off point with most sensitivity (S) and specificity (E) obtained using the Youden index (0.4246) was 18 (S ≈ 75%;E ≈ 67%), associated with significant difference in IHM (1.3% vs 7.6%). IHM by score interval was 1.3%, 3.1% and 25%, respectively, for the intervals 0-18, 19-29 and ≥ 30. ECHO-AHF score < 13 predicted in-hospital survival in all patients. Kaplan Meyer survival analysis by subgroup revealed significant differences in 24MM according to AHFM risk category (13.8% vs 21.9% vs 30.8%, respectively, $\chi^2 = 17.217$ p < 0.001), but not for 24 MH. Cox-regression analysis demonstrated that AHFM score remained a significant independent predictor of 24MM (HR:

1.067, p = 0.05), even after adjustment for other variables, such as coronary disease, chronic kidney disease, atrial fibrillation, EF and diabetes.
Conclusions: AHFM score is an accurate model for predicting IHM and long-term risk of HF death. Its use may help to identify patients with high risk of mortality, in need of specialized care, and those patients with lower risk of death, who might be candidates for early discharge or lenient follow-up.

PO 25. REAL WORLD NONINVASIVE EVALUATION OF THE ACUTE HEMODYNAMIC EFFECTS OF LEVOSIMENDAN CONTINUOUS INFUSION IN ADVANCED HEART FAILURE PATIENTS

Inês Fialho[1], João Baltazar Ferreira[2], Marco Beringuilho[2], Daniel Faria[2], João Bicho Augusto[2], Hilaryano Ferreira[2], Mariana Passos[2], Ana Oliveira Soares[2], David Roque[2]

[1]Hospital Amadora Sintra. [2]Hospital Prof. Doutor Fernando Fonseca.

Introduction: Intermittent use of levosimendan infusion has been showed to reduce plasma NT-proBNP levels and hospitalizations in advanced heart failure (adHF) patients. Ambulatory levosimendan infusion programs have been used for those who are not candidates for heart transplant and ventricular assist devices or as a bridge to these therapeutic options.
Objectives: To evaluate the acute hemodynamic effects of levosimendan continuous infusion in adHF patients.
Methods: We conducted a unicentric study of consecutive adHF patients with reduced ejection fraction, integrated in the ambulatory intermittent levosimendan infusion program of our Institution, the largest cohort in Portugal (10 patients). Patients were included if: 1) they were in New York Heart Failure Association (NYHA) class II-IV; 2) they were under optimal guideline-directed medical treatment. Patients with acute infections, systolic arterial pressure less than 80 mmHg, severe hepatic or kidney dysfunction were excluded. They received levosimendan by continuous infusion (0.05-0.1 μg/Kg/min) for 24 hours, with no bolus dose. Vital signs, NT-pro BNP, serum creatinine (sCr), and transthoracic echocardiogram (TTE) were evaluated before and up to 2 hours after the end of infusion. The non-invasive hemodynamic parameters cardiac index (CI), systemic vascular resistance (SVR), and estimated pulmonary artery pressure (PSAP) were evaluated.
Results: A total of 10 patients were included. The median age was 67 (58-75) years, 90% were males (n = 9). Ischemic HF was present in 50% (n = 5) of patients, 40% were in NYHA class III (n = 4), and 20% in NYHA class IV (n = 2). Most patients were chronically medicated with beta-blockers (n = 9, 90%), angiotensin receptor-neprilysin inhibitor (n = 6, 60%), mineralocorticoid receptor antagonists (n = 8, 80%), and diuretics (100%, n = 10). 20% (n = 2) received angiotensin-converting enzyme inhibitors, 50% (n = 5) received sodium-glucose co-transporter-2 inhibitors, 40% (n = 4) had a cardiac resynchronization therapy device, and 40% (n = 4) an implantable cardioverter defibrillator. The median NT-pro BNP level was 5,995 (IQR 2,460-18,070) ng/dL. After levosimendan infusion it was observed a significant 34% reduction of NT-proBNP (5,995, IQR 24,60-18,070 ng/dL vs 3,933, IQR 1979-8125 ng/dL, p = 0.005), a significant reduction of sCr (1.49 ± 0.53 mg/dL vs 1.28 ± 0.52 mg/dL, p < 0.001), a 22% reduction of PSAP (49, IQR 33-62 mmHg vs 38, IQR 29-52 mmHg, p = 0.015), and a significant 30% reduction of SVR (4,276, IQR 3,401-4,816 dynes/seconds/cm^{-5} vs 2974, IQR 2,376-3,552 dynes/seconds/cm^{-5}, p = 0.011). The CI presented a significant 21% increase (1.58 ± 0.34 L/min/m^2 vs 1.91 ± 0.25 L/min/m^2, p = 0.016).
Conclusions: Levosimendan infusion improves CI and decreases PSAP, SVR, NT-pro BNP, and sCr levels in real world adHF patients confirming the benefits of ambulatory levosimendan infusion programs in this subgroup of patients.

PO 26. CARDIOPULMONARY EXERCISE TESTING IN HEART FAILURE: THE ROLE OF CLASSIC AND NEW VARIABLES IN EVENT PREDICTION

João Borges Rosa, Gustavo M. Campos, Sofia Martinho, José Lopes de Almeida, Valdirene Gonçalves, Cátia Ferreira, André Azul Freitas, James Milner, João André Ferreira, Ana Vera Marinho, Patrícia M. Alves, Manuel Oliveira-Santos, Lino Gonçalves

Centro Hospitalar e Universitário de Coimbra.

Introduction: Cardiopulmonary exercise testing (CPET) has an important role in mortality prediction in heart failure (HF) and patient selection for heart transplant. New indices as circulatory power (CP) and ventilatory power (VP) have been proposed as predictors of cardiac events. In addition, VP predicts mean pulmonary artery pressure (mPAP) in patients with pulmonary arterial hypertension. We aimed to analyze the prognostic value of classic and new CPET variables in patients with HF.
Methods: We retrospectively assessed consecutive patients with HF who underwent CPET in a single-centre between 2013 and 2017. New CPET variables were collected: CP was defined as the product of peak O2 uptake and peak systolic blood pressure (SBP), while VP was defined as peak SBP divided by the minute ventilation–CO2 production (VE/VCO2) slope. The primary endpoint was a composite of all-cause mortality, heart transplant, or HF hospitalization. Survival analysis was performed using Kaplan-Meier curves and multivariable Cox regression.
Results: Overall, 216 patients (mean age 55.4 ± 10.9, 77.3% male) were included, 38.4% with ischemic HF, and mean left ventricle ejection fraction (LVEF) 30 ± 14%. Most patients were evaluated through the modified Naughton (76.3%), the original Naughton (19.0%), and Bruce protocols (4.7%). Regarding classic CPET variables: mean pVO2 16.8 ± 6.0 mL O2·kg^{-1}·min^{-1}, mean percent-predicted pVO2 62.6 ± 23.9%, median VE/VCO2 slope 37.3 [32.6-44.5], exercise oscillatory ventilation (EOV) present in 13.9%, resting partial pressure of end-tidal carbon dioxide (PETCO2) ≥ 33 mmHg with an increase of 3-8 mmHg during exercise in 17.1%, and mean peak SBP 128.8 ± 27.2 mmHg. Median circulatory power was 1,927 [1,404-2,694] mmHg·min/mL/kg and mean

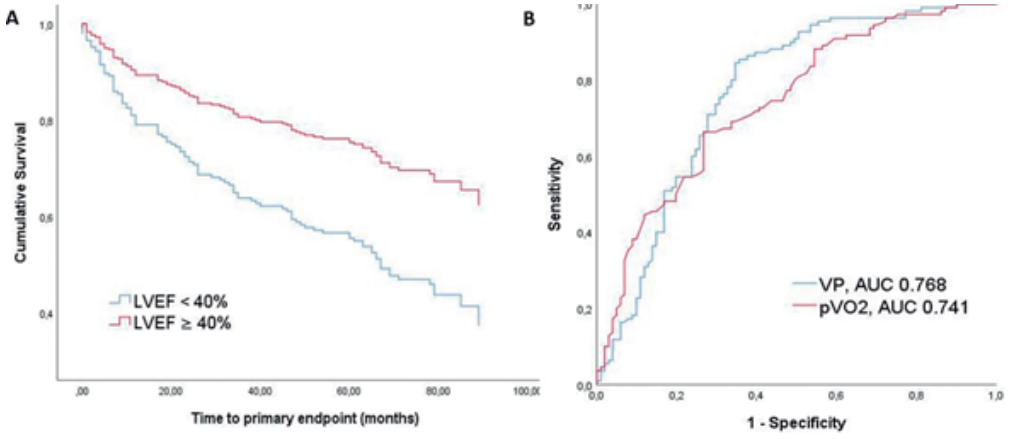

Figure 1. (A) Kaplan-Meier curves for the primary endpoint according to the LVEF. (B) ROC curves comparing the predictive value of VP and pVO2 for the primary endpoint.

PO 26 Figure

ventilatory power 3.47 ± 1.32 mmHg. After a median follow-up of 5 [4-6] years, the primary endpoint occurred in 66.2% of patients (rehospitalization, heart transplant, and all-cause death occurred in 57.0%, 25.9%, and 32.4%, respectively). In Cox regression multivariate analysis, the primary endpoint was predicted by pVO2 (HR 0.90, 95%CI 0.87-0.93), percent-predicted pVO2 (HR 0.97, 95%CI 0.96-0.98), VE/VCO2 slope (HR 1.04, 95%CI 1.03-1.06), VP (HR 0.62, 95%CI 0.52-0.73) but not CP (HR 0.99, 95%CI 0.98-1.01). Kaplan-Meier curves according to the LVEF are depicted in Figure 1A. ROC analysis (Figure 1B) revealed that VP (AUC 0.768) has higher discriminative power for the primary endpoint, compared to pVO2 (AUC 0.741). One hundred and twenty-seven patients also underwent right heart catheterization: mean mPAP was 30.6 ± 12.9 and it was not correlated with VP (r = -0.06, p = 0.47).

Conclusions: CPET variables are good predictors of all-cause mortality, heart transplant, or HF hospitalization. Ventilatory power (but not circulatory power) is an additional useful variable in event prediction. On the other hand, VP is not correlated with mPAP in patients with HF.

PO 27. THE RIGHT VENTRICLE: PAIRING STRUCTURAL WITH FUNCTIONAL ASSESSMENT

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Introduction: Right Ventricular (RV) dysfunction is a well-recognized prognostic marker in the natural history of left-sided Heart Failure (HF).

Table PO 27
Baseline Demographics

	Total (n=68)	No MACE (n=32)	MACE (n=36)	p-value
Population Demographics				
Age, mean ± SD (years)	56 ± 11	58 ± 11	54 ± 10	0.119
Male sex, n (%)	50 (73.5)	22 (68.8)	28 (77.8)	0.400
Baseline Characteristics				
Ischaemic HF, n (%)	30 (44.1)	12 (37.5)	18 (50.0)	0.066
HF for 18 months or longer, n (%)	53 (79.1)	28 (90.3)	25 (69.4)	0.036
NYHA III-IV functional class, n (%)	52 (76.5)	21 (65.7)	24 (66.7)	0.129
Hypertension, n (%)	26 (38.2)	11 (34.4)	15 (41.7)	0.537
Diabetes mellitus, n (%)	24 (35.3)	10 (31.3)	14 (38.9)	0.511
Atrial Fibrillation, n (%)	50 (73.5)	27 (84.4)	23 (63.9)	0.056
HF Management				
RAASi, n (%)	62 (91.2)	30 (93.8)	32 (88.9)	0.481
Beta-Blocker, n (%)	63 (92.6)	31 (96.9)	32 (88.9)	0.208
MRA, n (%)	51 (75.0)	24 (75.0)	27 (75.0)	1.000
Ivabradine, n (%)	8 (11.9)	3 (9.7)	5 (13.9)	0.596
Digoxine, n (%)	12 (18.2)	5 (16.7)	7 (19.4)	0.771
Furosemide, n (%)	62 (95.4)	28 (96.6)	34 (94.4)	0.687
CRT, n (%)	18 (26.5)	12 (37.5)	6 (16.7)	0.052
ICD, n (%)	45 (66.2)	18 (56.3)	27 (75.0)	0.103
RHC parameters				
PH, n (%)	61 (89.7)	30 (93.8)	31 (86.1)	0.301
SvO2, mean ± SD (%)	54 ± 12	58 ± 12	50 ± 11	0.005
sPAP, mean ± SD (mmHg)	58 ± 18	56 ± 18	59 ± 18	0.462
mPAP, mean ± SD (mmHg)	37 ± 10	35 ± 10	38 ± 10	0.184
PCWP, mean ± SD (mmHg)	26 ± 7	24 ± 7	28 ± 7	0.047
LVEDP, mean ± SD (mmHg)	25 ± 7	23 ± 7	27 ± 7	0.010
TPG, median (IQR) (mmHg)	10 (6-13)	10 (7-13)	8 (5-15)	0.333
PVR, median (IQR) (UW)	3 (2-6)	3 (2-5)	3 (2-6)	0.892
PA compliance, median (IQR)	1,24 (0.95-2.07)	1.57 (1.19-2.10)	1.13 (0.83-1.61)	0.026
PA elastance, median (IQR)	1.40 (1.03-1.85)	1.21 (0.91-1.63)	1.73 (1.17-2.32)	0.006
PAPi, median (IQR)	2.59 ± 1.80	2.25 (1.68-3.44)	2.03 (1.30-3.24)	0.450
RVSWi, median (IQR)	464 (311-679)	478 (321-694)	453 (267-640)	0.468
CI, median (IQR) (L/min/m2)	1.6 (1.3-1.8)	1.7 (1.4-1.9)	1.5 (1.3-1.8)	0.114
LVSVi, median (IQR) (mL/m2)	22 (18-27)	26 (20-29)	20 (17-24)	0.017
Echocardiographic Parameters				
LVEF, mean ± SD (%)	29 ± 12	28 ± 13	29 ± 11	0.845
E/A ratio, median (IQR)	2.8 (1.5-4.6)	2.2 (1.3-4.3)	2.9 (2.1-4.6)	0.477
Lateral e', mean ± SD (m/s)	0.06 ± 0.03	0.06 ± 0.03	0.07 ± 0.03	0.755
E/e' ratio, median (IQR)	15 (10-21)	18 (13-23)	12 (10-17)	0.093
Non-invasive sPAP, mean ± SD (mmHg)	50 ± 15	48 ± 15	51 ± 16	0.593
TAPSE, mean ± SD (mm)	14 ± 4	15 ± 4	13 ± 4	0.081
RV S', mean ± SD (m/s)	0.08 ± 0.02	0.08 ± 0.02	0.08 ± 0.02	0.697
RV FAC, mean ± SD (%)	29 ± 15	35 ± 16	24 ± 13	0.010
RV FWL Strain, mean ± SD (%)	-13 ± 4	-15 ± 4	-11 ± 5	0.012
RV Preserved Shape, n (%)	38 (66.7)	21 (77.8)	17 (56.7)	0.091
RV basal diameter, median (IQR) (mm)	46 (40-53)	46 (40-53)	47 (41-51)	0.892
RV to LV ratio, mean ± SD	0.80 ± 0.21	0.74 (0.58-0.82)	0.84 (0.72-1.00)	0.016
RV Dysfunction, n (%)	46 (79.3)	18 (69.3)	27 (84.4)	0.025
IVC diameter, mean ± SD (mm)	23 ± 7	23 ± 8	22 ± 6	0.831

CI: Cardiac Index CRT: Cardiac Resynchronization Therapy; dPAP: diastolic Pulmonary Artery Pressure; FAC: Fractional Area Exchange; FWL: Free-Wall Longitudinal; HF: Heart Failure; ICD: Implantable Cardioverter-Defibrillator; IVC: Inferior Vena Cava; LV: Left Ventricle; LVEDP: Left Ventricular End-Diastolic Pressure; LVEF: Left Ventricular Ejection Fraction LVSVi: Left Ventricular Stroke Volume index; MACE: Major Adverse Cardiovascular Events; mPAP: mean Pulmonary Artery Pressure; MRA: Mineralocorticoid Receptor Antagonist; NYHA: New York Heart Association; PAPi: Pulmonary Artery Pulsatility index; PCWP: Pulmonary Capillary Wedge Pressure; PH: Pulmonary Hypertension; PVR: Pulmonary Vascular Resistance; RAASi: Renin-Angiotensin-Aldosterone System inhibitors; RV: Right Ventricle; RVSWi: Right Ventricular Systolic Work index; SD: Standard Deviation; sPAP: systolic Pulmonary Artery Pressure; TAPSE: Tricuspid Annular Plane Systolic Excursion; TPG: Transpulmonary Gradient.

Common experience dictates that structural and functional evaluation are often seemingly discrepant. We aimed to evaluate the correlation between RV function by transthoracic echocardiography (TTE) and Right Heart Catheterization (RHC) parameters, and their prognostic value in patients with HF.
Methods: We designed a retrospective single-centre study of patients with advanced HF referred to TTE and RHC as part of Heart Transplant candidacy evaluation, from 2010 to 2019. Pulmonary Hypertension (PH) was defined by a mean pulmonary artery pressure (mPAP) ≥ 25 mmHg. Patients with PH other than Group II (WHO) PH were excluded. In appropriate cases, vasodilator challenge with inhaled NO was performed. The primary endpoint was a composite of death, heart transplant or HF hospitalization at 6 months.
Results: The cohort was comprised of 68 patients (mean age 56 ± 11 years, 73.5% male, ischaemic HF 44.1%). Most patients had PH (n = 61) and TTE evidence of RV dysfunction (n = 46). The strongest correlations between RHC and TTE parameters were moderate at best – mPAP, pulmonary capillary wedge pressure and central venous pressure with E/A ratio (Pearson r 0.461, 0.533 and 0.543, respectively; p < 0.05); and RV stroke work index and mPAP with non-invasive estimated systolic pulmonary artery (PA) pressure (Pearson r 0.483 and 0.481, respectively; p < 0.05). Over a median follow-up of 26 (12-42) months, 53 patients had a primary endpoint event, of whom 36 within 6 months. The best model integrating data from structural and functional assessment to predict the primary endpoint included the systolic PA pressure to stroke volume ratio – i.e. PA elastance (HR per 0.10 units: 2.817; 95%CI 1.030-1.338; p = 0.016) – and RV free wall longitudinal strain (HR per -1%: 0.792; 95%CI 0.656-0.956; p = 0.015). ROC curve analysis disclosed the best cut-off values as follows: 1.3 (sensitivity 77.2%, specificity 65.6%) and -18% (sensitivity 10.7%, specificity 86.4%), respectively.
Conclusions: In a cohort of patients with advanced HF, who were potential candidates for heart transplantation, RV dysfunction was often noted. The model with highest accuracy to predict the primary outcome integrated RV structural with functional data. Additional studies are warranted to define well-validated scores useful in the algorithmic therapeutic decision of advanced HF.

PO 28. THE REPRESENTATIVENESS OF VICTORIA AND GALACTIC-HF TRIALS IN A CONTEMPORARY COHORT OF PATIENTS WITH HEART FAILURE WITH REDUCED EJECTION FRACTION

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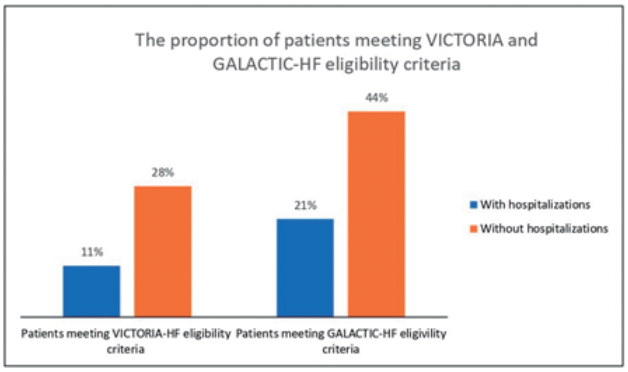
Introduction: New therapies for heart failure with reduced ejection fraction (HFrEF) have been recently developed. It is still unclear the proportion of patients of clinical practice that will benefit from them. We aimed to examine the representativeness of the VICTORIA and GALACTIC-HF trials among a contemporary cohort of HFrEF patients followed at an HF outpatient clinic.
Methods: We performed a retrospective, cross-sectional, single-center study of 100 consecutive HFrEF patients from our HF outpatient clinic (January-June 2020). VICTORIA eligibility criteria were an LVEF < 45%; NT-proBNP ≥ 1,000 pg/mL if sinus rhythm (SR) or ≥ 1,600 pg/mL if atrial fibrillation (Afib); and prior hospitalization in the last 6 months or IV diuretic therapy in the last 3 months. GALACTIC-HF eligibility criteria were an LVEF < 35%, hospitalization or emergency room visit in the last 12 months; NT-proBNP > 400 ng/mL if SR ≥ 1,200 pg/mL if Afib or atrial flutter.
Results: The mean age of our patients was 62 ± 12 years and only 24% were female. The etiology of HF was ischemic in 42% of the patients, 86% of patients were in NYHA II class and 5% in NYHA III-IV. The mean LVEF was 34 ± 5% and the median NT-proBNP was 482 pg/mL [172-1,120]. Regarding treatment, 92% of patients were on betablockers (BB), 67% on ACEI/ARBs, 25% on ARNI, 81% on MRA and 30% on iSGLT2. The use of implantable cardioverter-defibrillators was 38% and 20% of patients were resynchronized. The proportion of patients meeting VICTORIA and GALACTIC-HF eligibility criteria was 11% and 21%, respectively. But excluding the criteria of recent hospitalization the representativeness of the VICTORIA trial increased to 28% and the GALACTIC-HF to 44%. The patients that met VICTORIA eligibility criteria were older (60 ± 11 y vs 10 ± 12 y; p = 0.006), had worse functional class (NYHA III-IV: 18% vs 3%; p = 0.03), were less likely to be treated with an MRA (55% vs 85%; p = 0.013) and an iSGLT2 (0% vs 34%; p = 0.02). Those that met GALACTIC-HF eligibility criteria had a lower LVEF (31 ± 3% vs 35 ± 6%; p = 0.01), were less likely to be treated with an iSGLT2 (35% vs 10%; p = 0.02) and more likely to be treated with a loop diuretic (86% vs 65%; p = 0.06).

Figure 1: The proportion of patients meeting VICTORIA and GALACTIC-HF eligibility criteria.



Conclusions: In a contemporary optimally treated HFrEF cohort only a small proportion of patients met the eligibility criteria used in VICTORIA and GALACTIC-HF trials, which identified older patients with more advanced disease.

PO 29. IMPACT OF LOCKDOWN MEASURES DURING COVID-19 PANDEMIC IN ACTIVITY LEVEL OF PATIENTS WITH CARDIAC RESYNCHRONIZATION THERAPY DEVICE: REMOTE MONITORING DATA FROM THE TRIAGE-HF RISK SCORE

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Introduction: TRIAGE-HF risk score is a validated remote monitoring (RM) tool allowing integrated continuous physiological evaluation to risk-stratify patients (P) regarding heart failure (HF) decompensation events. Among other parameters, RM includes data from P activity (PA). A decreasing trend in PA, as a result of lockdown measures during COVID-19 outbreak, has been pointed out as a concern about the potential effects on cardiovascular risk.
Objectives: To evaluate the impact of lockdown measures during COVID-19 pandemic in activity levels of P with HF submitted to cardiac resynchronization therapy (CRT), followed via RM using the TRIAGE-HF risk score.
Methods: HF P carrying CRT devices with Heart Failure Risk Status (HFRFS) algorithm available, and regular RM transmissions during the follow-up period were included. Three periods were considered: before lockdown (from January to 17th March 2020), during lockdown (18th of March to 2nd of May 2020) and after lockdown (3rd May to 14th of June). PA, measured by a single-axis accelerometer in the device, was analysed in all transmissions. HFRS algorithm which classifies the P as low, medium or high risk was analysed. The relationship between the patients' activity in the three different moments was assessed by ANOVA analysis.
Results: RM transmissions of 35P were assessed (71 ± 10 years, 71.4% males, NYHA> II in 70%, left ventricular ejection fraction (LVEF) 28 ± 7.8%). Post-CRT, LVEF was 52 ± 7.21%, NT-proBNP 207 ± 142 pg/mL, NYHA class> II in 46%P); the responder rate was 85%. PA during the lockdown period declined from 2.8 hours/day to 1.9 hours/day, increasing to 2.3 hours/day in the post-lockdown period (p < 0.001). After lockdown, 16P (46%) showed a persistent lower level of activity, compared to the pre-lockdown period. No significant differences were noted in the P HFRS during the 3 considered periods (pre-lockdown: low-risk 27%, medium-risk - 54%, high-risk - 19%; during lockdown:

low-risk - 22%, medium-risk - 61%, high-risk - 17%; post-lockdown: low-risk - 34%, medium-risk - 51%, high-risk - 15%, p = 0.067).
Conclusions: Data obtained from the RM HFRS algorithm in P with CRT revealed a significant decline in physical activity during the lockdown period related to COVID-19 pandemic. Moreover, some P did not recover to the pre-lockdown levels of exercise, which may prompt this population to future adverse HF outcomes.

PO 30. ECHOCARDIOGRAPHIC PREDICTORS OF EXERCISE INTOLERANCE IN HEART FAILURE WITH REDUCED EJECTION FRACTION

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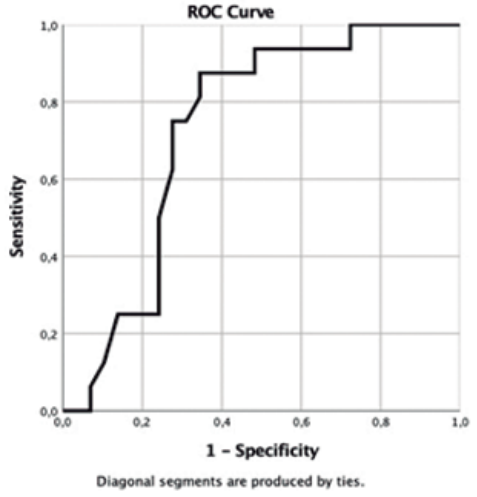
Introduction: Cardiopulmonary exercise testing (CPET) is routinely used in the prognostic evaluation of patients with heart failure with reduced ejection fraction (HFrEF). Left ventricular ejection fraction (LVEF) is a strong prognostic marker but have shown a bad correlation with exercise capacity. The aim of this study is to assess the relationship between echocardiographic parameters and exercise capacity in HFrEF patients.
Methods: We retrospectively assessed all patients with HFrEF submitted to CPET and echocardiography between March and September of 2019. 73 patients were eligible for analysis. ANOVA test was used to compare Weber class groups regarding echocardiographic parameters. Multivariate linear regression with a stepwise approach was used to assess independent predictors of peak VO_2 uptake. ROC curves were compared to assess the best parameter to discriminate a peak VO2 < 10 ml/Kg/min (Weber class D).
Results: Mean age was 53.4 ± 11.7 years with 72.6% being male. Mean LVEF was 29.2 ± 7.7% and mean peak VO_2 was 13.4 ± 3.8 ml/Kg/min. Between the Weber class groups, significant differences were found in left (LV) and right ventricular (RV) longitudinal strain (p < 0.001 and p = 0.005 respectively), in the left and right atrial reservoir strain (p = 0.009 and p < 0.001 respectively), in pulmonary velocity acceleration time (p = 0.002) and in maximal tricuspid regurgitation velocity (TRmax) (p = 0.014). Left ventricular ejection fraction, tricuspid annular plane systolic excursion, and ratio E/e` were not significantly different among exercise capacity groups. Additionally, only RV longitudinal strain (r^2 = 0.225, p = 0.008) and TRmax (r^2 = 0.073, p = 0.030) were independent predictors of peak VO_2. RV longitudinal strain showed the best accuracy in discriminating a Weber class of D (AUC = 0.731, IC 95% 0.613-0.848, p = 0.005) with a calculated cut-off value of -8.6% and with a negative predictive value of 95%.

Figure 1. ROC curve of RV longitudinal strain discriminating a Weber class of D (AUC=0.731, IC 95% 0.613 – 0.848, P=0.005)



Conclusions: RV longitudinal strain and TRmax seem to be the best echocardiographic predictors of exercise intolerance in patients with HFrEF. Since CPET is not widely available, these echocardiographic parameters can be clinically useful as a surrogate prognostic factor.

PO 31. READMISSIONS IN HEART FAILURE PATIENTS: A PORTUGUESE ADMINISTRATIVE DATABASE STUDY FROM 2008 TO 2018

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Objectives: The primary objective of this study was to analyze the readmissions evolution pattern and characterize readmitted heart failure (HF) patients in the Portuguese National Health Service (NHS) between 2008 and 2018.
Methods: This is a retrospective longitudinal study that used inpatient discharge data set from all mainland Portuguese NHS public hospitals. For each civil year, admissions of HF diagnosed patients (as primary or secondary diagnosis) were identified through ICD-9-CM and ICD-10-CM codes. Readmitted patients were selected to calculate: 1) the total number of readmissions; 2) the mean number of readmissions; the proportion of readmissions at 30, 90 and 120 days after first admission discharge. Sociodemographic characteristics (age, gender and residency district) and clinical characteristics (cardiovascular and non-cardiovascular comorbidities) were used to understand readmitted patients profile.
Results: From 2008 to 2018, a total of 770,844 admissions in HF patients were registered, from which 20.9% (in 2008) and 26.1% (in 2018) corresponded to readmissions. For each civil year, the majority of readmissions (> 70%) occurred until 90 days after discharge. 30 days readmission after discharge proportion increased between 2008 (39.5%) and 2011 (46.4%) and sustained until 2018. Between 2008 and 2018, 30 day readmissions increased by 20%. The number of HF readmitted patients has been rising since 2008, with a proportion varying between 18.5% in 2008 and 19.8% in 2018. The majority of patients had 1 readmission, with a rise in the mean number of readmissions: 1.43 in 2008 and 1.78 in 2018. HF readmitted patients were mostly women (53-55%) and had a mean age that varied between 73.6 years old in 2008 and 79.4 years old in 2018. The majority of HF readmitted patients were from Lisbon and Porto. Hypertension was the most prevalent comorbidity, identified in 56% to 73% of readmitted patients with an increase of 17.4% between 2008 and 2018. Atrial fibrillation diagnose also increased within the study period, varying between 36.8% in 2008 and 48.7% in 2008. Type 2 diabetes *mellitus* was also a frequent diagnose in readmitted HF patients (34.4% to 39.3%) and chronic obstructive pulmonary disease was the less frequent comorbidity, identified in 17-19% of the patients.
Conclusions: The number of admissions and readmissions in HF patients has been growing in the last years. Readmissions are associated with a worse prognosis, increased mortality and represent a significant burden for health systems. Mean age of HF readmitted patients is increasing, as well as the comorbidity burden, which demands for an integrated multidisciplinary approach in the care continuum.

PO 32. CARDIOPULMONARY TESTING IN PATIENTS WITH HEARTMATE 3 LEFT VENTRICULAR ASSIST DEVICE

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Introduction: Functional capacity measured by NYHA functional class and Cardiopulmonary Stress Testing (CPET) is routinely assessed in patients with Heart Failure (HF) previous to Left Ventricular Assist Device (LVAD) implantation. We aimed to evaluate the serial changes in exercise capacity before and following long-term LVAD implantation.
Methods: We describe a case series of patients who underwent a HeartMate 3™ (Abbott, IL) LVAD implantation as bridge to transplant in our center.

	Patient 1	Patient 2	Patient 3
- **Baseline Demographics** (before LVAD implantation)			
Age	44 years	66 years	59 years
Sex	Male	Male	Male
HF etiology	Ischemic	Non-Ischemic	Ischemic
LVEF	23%	25%	25%
ICD indication	Secondary Prevention	Secondary Prevention	Primary Prevention
- **LVAD implantation** (at or shortly after discharge)			
HM implantation	July 2019	June 2020	November 2020
Baseline rpm	5000	5200	4800
Baseline flow	4.0 L/min	4.9 L/min	4.0 L/min
ICD therapy zone	HR >200bpm	HR >200bpm	HR >222bpm
- **Follow-up** (median 3 to 6 months)			
CR Program (after)	Yes	Yes	Yes
HF hospitalization	None	None	None

Table 1: Baseline Demographics, discharge and follow-up.

PO 32 Figure 1

	Before LVAD implantation	After implantation, beginning of CR	After implantation, end of CR
- **Patient 1**			
NYHA class	IV_a	III	I
NT-proBNP, pg/mL	4412	2360	1046
pVO2 (% predicted)	9.6 mL/kg/min (34%)	13.7 mL/kg/min (48.1%)	17.6 mL/kg/min (64%)
VE/VCO2 slope	65.2	41	31.6
Presence of EOV	Yes	Yes	No
- **Patient 2**			
NYHA class	III	II	I
NT-proBNP, pg/mL	4526	1925	1456
pVO2 (% predicted)	10.8 mL/kg/min (31%)	13 mL/kg/min (39%)	16.1 mL/kg/min (51%)
VE/VCO2 slope	67.8	48.2	45.3
Presence of EOV	Yes	Yes	No
- **Patient 3**			
NYHA class	III	II	-
NT-proBNP, pg/mL	3155	1098	-
pVO2 (% predicted)	10.6 mL/kg/min (35%)	12.8 mL/kg/min (44%)	-
VE/VCO2 slope	66.1	36.3	-
Presence of EOV	Yes	No	-

CR = Cardiac Rehabilitation; HF = Heart Failure; HR = Heart Rate; ICD = Implantable Cardioverter-Defibrillator; LVEF = Left Ventricular Ejection Fraction; NYHA = New York Heart Association; rpm = rotations per minute;

Table 2: Serial evaluation before, at discharge and following HeartMate 3™ implantation.

PO 32 Figure 2

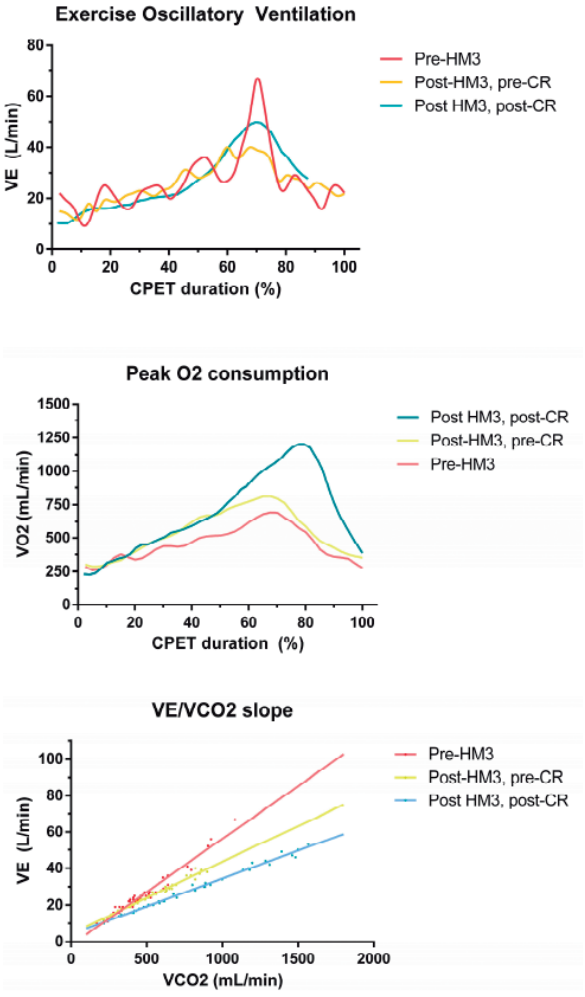

Figure 1 – Example of evolution of CPET parameter through time in Patient 1. A- Exercise oscillatory ventilation. B- peak VO2. C – VE-VO2 slope.

Figure 3

CPET was performed at baseline, for decision regarding HeartMate 3™ implantation, 2-3 months after the procedure, at the time of inclusion in the Cardiac Rehabilitation (CR) Program and at the end of the CR program, after approximately 4 months. Individual 9-panel plot CPET tracings at pre- and post-LVAD implantation were assessed, including the peak oxygen uptake (pVO_2), minute ventilation/carbon dioxide production (VE/VCO_2), as well as the presence of exercise oscillatory ventilation (EOV).

Results: Three patients were evaluated (Table 1), all of whom had advanced HF (NYHA III-IV_a, LVEF < 25%, INTERMACS 4, and recurrent HF hospitalizations) and were treated with a HeartMate 3™ LVAD as bridge to transplant. All patients had been previously enrolled in CR before device implantation, and all resumed CR following device implantation. Serial clinical, laboratory and CPET evaluation demonstrates a meaningful improvement in all cases, shortly after discharge and during ambulatory follow-up, namely reduction in NYHA class, levels of NT-pro-BNP and VE/VO2 slope, increase in peak VO2 consumption and disappearance of exercise oscillatory ventilations (EOV) (Figure, Table 2). There were only minimal adjustments (± 0-100 rpm) in HeartMate 3™ LVAD parameters between evaluations. There were no hospitalizations for HF nor were there any adverse events during CPET, home-based and/or center-based CR. Currently, all patients are enlisted and await heart transplantation.

Conclusions: Our preliminary results show that CPET is a feasible and safe procedure in HF patients supported by a Heartmate 3 LVAD. HF guideline-directed treatment combined with a LVAD pump and CR were associated with a subjective and objective improvement, not only in the early post-LAVD implantation period, but also in the long term.

PO 33. MYOCARDIAL ACTIVATION VELOCITY IN THE SELECTION OF CRT CANDIDATES

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[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [2]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário. [3]Faculdade de Medicina da Universidade de Lisboa.

Introduction: Cardiac resynchronization (CRT) is effective in correcting electrical dyssynchrony as manifest by left bundle branch block (LBBB) and widened QRS duration. LBBB forces LV activation to be mediated by myocyte-to-myocyte transmission which has a slower conduction speed than ordinary conduction tissue. In addition, QRS duration is also related to left ventricular size and mass and may be significantly prolonged even in the absence of true LBBB in severely dilated hearts. We hypothesized that correcting QRS duration for LV size would allow better assessment of true LV activation delay and would be a more sensitive marker for patients benefitting from CRT.
Objectives: To understand whether a non-invasive index of myocardial activation velocity is related to outcome after CRT implantation.
Methods: We performed a secondary analysis of the patients included in the BETTER-HF trial which was a prospective study of heart failure patients submitted to CRT. Patients were eligible if they presented indication for CRT implant according to current guidelines (LBBB+wQRS > 130 ms or wQRS > 150 ms for any QRS morphology).Path length (from start to end of LV activation) was calculated as *pi** (end-diastolic LV intraventricular septum thickness + end diastolic LV diameter + end diastolic posterior wall thickness). Activation velocity was the calculated as (path length)/(QRS duration), resulting in the myocardial activation velocity (MAV) in meters/sec. MAV was compared with previously reported values for advanced HF patients with normal QRS duration. The primary outcome was a composite endpoint of death, admission for heart failure or appropriate shock > 6 months after implant.
Results: 54 patients had data on QRS duration and follow up events and were included in the final analysis. Mean age 76.8 ± 11.2, male sex 59%, mean LVEF 24 ± 8%, 74% NYHA class ≥ III. Mean activation velocity was 2.04 +/- 0.36 m/sec and was significantly slower than in previously reported patients with normal QRS duration (mean 2.73 m/sec, p < 0.001). Patients with LBBB presented a lower MAV than those with non-specific intraventricular delay (2.00 ± 0.34 mm/ms vs 2.25 ± 0.42 m/s, p = 0.05). Logistic regression showed that MAV, but not QRS duration or baseline LVEF (p = ns), was associated with the primary outcome (Odds ratio 6.06, CI 1.07-34.3, p = 0.042).
Conclusions: In CRT candidates, myocardial activation velocity allowed more accurate identification of patients with true LV conduction delay; these patients had the greatest benefit from CRT at follow-up. This index may improve patient selection as compared with QRS duration measurement.

PO 34. OPTIMIZED MEDICAL THERAPY IN NON-ISCHEMIC HEART FAILURE – HOW ABOUT REAL LIFE?

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Introduction: In the last recent years, the world has faced a constant innovation with regard to treatment of heart failure with reduced ejection fraction (HFREF). New pharmacological classes, such as angiotensin receptor- neprilysin inhibitor (ARNI) or SGLT2-inhibitors, had shown impressive results in clinical trials. However, little real-life data is available regarding the improvement on left ventricle ejection fraction (LVEF) in pts medicated with ACE inhibitors and betablockers (BB).
Objectives: To characterize patients (pts) with non-ischemic dilated cardiomyopathy that were admitted to our heart failure consultation in the last 2 years. To define how many started therapy with ACEi and BB in the first place and which was the impact on the LVEF after reaching the optimized dose.

Methods: Single center retrospective study that analyzed all pts with non-ischemic dilated cardiomyopathy admitted on heart failure appointments in the last two years (2018-2020). Clinical and imaging data were collected, as well as data concerning treatment options and target doses. After optimized medical therapy, echocardiographic evaluations were performed in order to evaluate LVEF improvement. The primary endpoint was a composite endpoint of final LVEF > 40% and NT-proBNp < 300 pg/mL.
Results: We analyze a total of 64 pts with non-ischemic dilated cardiomyopathy, 71.9% from the male sex, with a mean age of 59 ± 12 years old. Concerning cardiovascular risk factors: 46.9% had hypertension, 34.4% dyslipidemia, 28.1% were active smokers or had at least moderate beverage habits and 20.3% had diabetes. 31.7% had history of atrial fibrillation and 15.6% were obese. The initial median LVEF was 28%, half of the pts had at least moderate mitral regurgitation and 45% had also right ventricle dysfunction. By the time of first evaluation, the majority were in NYAH class 2 or higher. The mean systolic blood pressure was 106 ± 18 mmHg, mean NT-proBNP level was 3,096 ± 5,138 pg/mL and mean creatine level was 1.1 ± 0.46 mg/dL. Regarding medical therapy, 61.1% of the pts started combined therapy with ACE-I and BB. The mean percentage of maximum dose achieved for ACEi and for BB therapy was 69 ± 30% and 72 ± 28%. 16% were medicated with SGLT2i. Three to six months after optimized medical therapy with ACE-i+BB, there was a significant improvement in LVEF (42 vs 27%, p < 0.001) and on NT-proBNP levels (769 vs 2771 pg/mL, p < 0.001). More than a half of pts (58.75) achieved the primary combined endpoint after 6 months, 2 pts were hospitalized due to heart failure and 1 died.
Conclusions: Treatment of HRREF is facing a constant innovation nowadays. On this real-life study, a significant proportion of pts non-ischemic dilated myocardiopathy medicated with ACE-I and betablocker showed important improvement on final LVEF and NT-proBNP levels after 6 months of optimized treatment.

PO 35. PROGNOSTIC VALUE OF RELATIVE WALL THICKNESS IN HEART FAILURE WITH PRESERVED EJECTION FRACTION: WHAT IS THE BEST METHOD FOR ITS CALCULATION?

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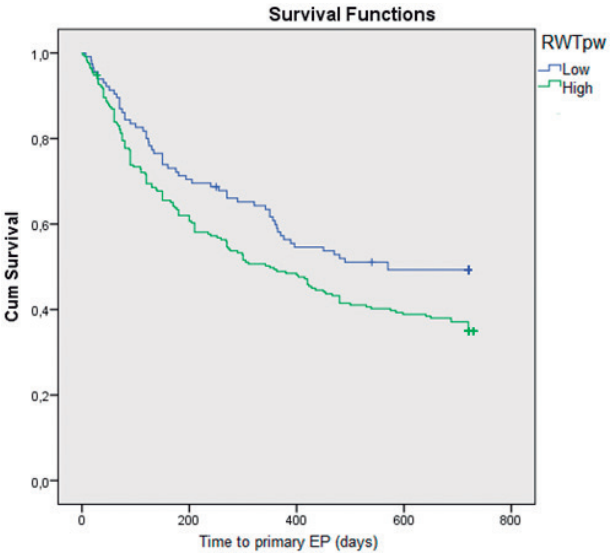
Introduction: The HFA-PEFF diagnostic algorithm is a recently published tool to help in the diagnosis of heart failure with preserved ejection fraction (HFpEF). One of the echocardiographic diagnostic criteria is left ventricular (LV) relative wall thickness (RWT), an index of LV concentricity. LV wall thickness can be measured by echocardiography at the posterior wall (PW) and/or the interventricular septum (IVS) in parasternal long axis view. There are three methods of RWT calculation: RWT_{PW} = 2xPW/LV dimension at end diastole (LVDd) – the most used method -, RWT_{IVS} = 2xIVS/LVDd and RWT_{PW+IVS} = (PW+IVS)/LVDd. This study compares the prognostic value of these 3 methods of calculation in patients with acute HFpEF.
Methods: All patients admitted with acute HFpEF in a Cardiology Department during 7 years were included. RWT was considered elevated if superior to its median and was calculated with the 3 formulas. In-hospital mortality (IHM) was evaluated. The primary endpoint (EP) was a composite of all-cause mortality or hospitalization for HF during follow-up of 24 months. Statistical analysis used chi-square and Mann-Whitney U tests, binary logistic regressions, and Kaplan-Meier curves.
Results: 478 patients were studied (61.3% female, mean age 79.4 ± 8.3 years). Mean RWT_{PW}, RWT_{IVS} and RWT_{PW+IVS} were 0.46 ± 0.16, 0.50 ± 0.17 and 0.48 ± 0.16, respectively. IHM was 3.4% and primary EP occurred in 57.8%. High RWT_{PW} was associated with higher LV ejection fraction (LVEF) (p < 0.001). Patients with high RWT_{IVS} were older (p = 0.044). High RWT_{PW+IVS} was associated with higher left atrial area (p = 0.037) and higher LVEF (p = 0.002). There was no statistically significant difference between patients with high and low RWT, calculated using the 3 formulas, in other indices that are commonly used to assess diastolic function, namely in e' and E/e'. None of the 3 methods of RWT calculation was a predictor of IHM. Survival analysis showed that patients with high RWT_{PW} had higher incidence of the primary EP (43.2% vs. 16.8%, Kaplan-Meier χ^2 = 5.99; p = 0.014), but not patients with high RWT_{IVS} (Kaplan-Meier χ^2 = 0.23; p = 0.631) or RWT_{PW+IVS} (Kaplan-Meier χ^2 = 1.92; p = 0.166). RWT_{PW} was a predictor of primary EP (OR 1.81; 95%CI 1.15-2.85; p = 0.011) and this result was independent from e' and E/e' (OR 2.96; 95%CI 1.08-8.10; p = 0.035).



Conclusions: In this study comparing 3 formulas for calculation of RWT, RWT_{PW} had better risk prediction during follow-up than RWT_{IVS} or RWT_{PW+IVS}. RWT_{PW} was a predictor of all-cause mortality and hospitalization for HF, and was independent from e' and E/e', indexes that are also recommended in HFA-PEFF diagnostic algorithm. Therefore, the formula incorporating PW should be preferred in the evaluation of patients with suspected or diagnosed HFpEF.

PO 36. VALIDATION OF A NOVEL FRAMEWORK DEFINING THE ACCEPTABLE STANDARD OF CARE FOR HEART FAILURE WITH REDUCED EJECTION FRACTION

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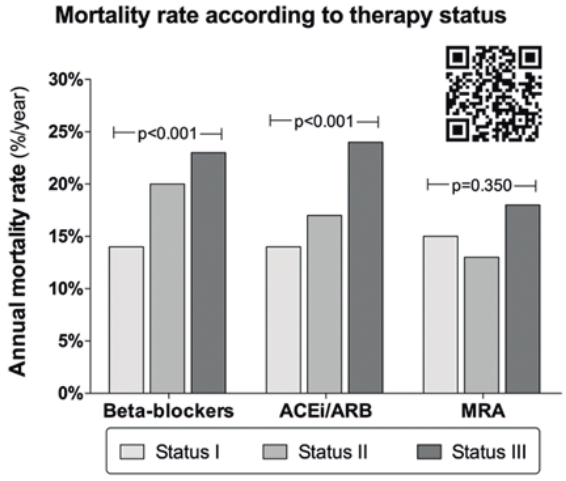
Introduction: In heart failure with reduced ejection fraction (HFrEF), uptitration of neurohormonal antagonists to trial-proven doses shown to reduce mortality is challenging and seldomly achieved in clinical practice. A major reason for underdosing of these agents is the lack of a clear description of what constitutes an acceptable standard of care in HFrEF. To address this limitation, a novel framework for describing the physician adherence to evidence-based treatment was recently proposed. The aim of our study was to evaluate and validate the proposed framework in a real-world population of patients with HFrEF.
Methods: A cohort of patients with HFrEF, defined as left ventricular ejection fraction (LVEF) < 40%, under treatment with neurohormonal antagonists for at least 3 months were retrospectively identified at a tertiary hospital's Heart Failure Clinic. Demographic, clinical, echocardiographic and treatment data were assessed. Patients were divided in three strata for each neurohormonal antagonist, according to the proposed framework: *Status I* - patients receiving target doses or the highest tolerated dose; *Status II* - use of subtarget doses for reasons unrelated to clinically important intolerance; and *Status III* - not receiving the drug at any dose. The prognostic value of each strata was assessed for all-cause mortality.
Results: A total of 408 patients (mean age 68 ± 12 years, 78% male, 63% ischemic etiology) were included. The median LVEF was 31% (IQR 25-36) and most patients were in NYHA class II or III [210 (51.5%) and 163 (40%), respectively].

Table 1	Beta-blockers	ACEi / ARB	MRA
Study population (n= 408)			
on therapy, n (%)	382 (93.6)	380 (93.1)	208 (51.0)
on maximal dose, %	26.7	41.2	65.9
on ≥ 50% of maximal dose, %	60.7	67.9	99.0
percent of maximal dose, median % (IQR)	50 (25-100)	50 (25-100)	100 (50-100)
Status 1, n (%)	309 (75.7)	302 (74)	167 (40.9)
Status 2, n (%)	73 (17.9)	78 (19.1)	41 (10)
Status 3, n (%)	26 (6.4)	28 (6.9)	200 (49)

Figure 1



PO 36 Figure 1

Medical therapy is described in Table 1. During a median follow-up of 3.3 years (IQR 1.4-5.6), 210 patients died. On univariable analysis, achieving *Status I* of beta-blocker (BB) therapy (HR: 0.50; 95%CI: 0.32-0.81; *p* = 0.004) or ACEi/ARB (HR: 0.56; 95%CI: 0.36-0.86; *p* = 0.012) was associated with reduced all-cause mortality. The mortality of patients in *Status II* of BB or ACEi/ARB was similar to the mortality of those not receiving the drug (HR for BB: 0.90; 95%CI: 0.53-1.52; *p* = 0.69 and HR for ACEi/ARB: 0.71; 95%CI: 0.42-1.18; *p* = 0.182) – figure 1. Achieving *Status I* of BB remained independently associated with reduced mortality after adjustment for several clinical and echocardiographic confounders (n = 13) (adjusted HR: 0.59; 95%CI: 0.35-0.98; *p* = 0.041).

Conclusions: In this real-world population of patients with HFrEF, the vast majority of patients were in *Status I* of BB and ACEi/ARB therapy. Achieving *Status I* of BB therapy seems to be associated with reduced mortality, even after adjustment for several markers of disease severity, highlighting the need for uptitration of medical therapy to maximal tolerated doses according to trial-proven regimens.

PO 37. PROGNOSIS SIGNIFICANCE OF REACHING OPTIMAL MEDICAL THERAPY IN PATIENTS WITH HEART FAILURE- A REAL LIFE OVERVIEW

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Introduction: Heart failure remains a condition with an ominous prognosis, in spite of a growing number therapeutic options. So, it is important to elucidate which drugs and respective doses can impact survival outcomes.

Objectives: To study benefit of reaching optimal medical therapy in real life heart failure cohort patients.

Methods: Consecutive patients with heart failure diagnosis, ejection fraction < 50% and regular follow-up for at least 12 months in a heart failure unit (n = 262, mean follow-up of 485.3 ± 184.6 days) were included. Patients with optimal medical therapy (OMT) were compared with patients without OMT. OMT was defined as at least 50% of target doses of all of three principal prognostic modifying drugs in heart failure (mineralocorticoid antagonists; aldosterone conversion enzyme inhibitor/aldosterone receptor antagonist; beta-blocker). Primary end-point was defined as death and secondary endpoint was a combined hospitalization or an emergency unscheduled visit due to heart failure (MACE). Between patients that did not reach OMT were made a subgroup stratification with patients under at least 50% of target doses of only one drug class or only two drug classes and compared survival outcomes between them. To estimate trends in survival curves of each group was used Kaplan-Meier test and chi Square test to compare secondary endpoint between groups. Groups basal characteristics and comorbidities were adjusted (Table). Significance was considered when p < 0.05.

Results: Patients that reached OMT had a better vital prognoses compared to patients that did not reach it during follow-up period (mortality 1.6% vs 9.5%, p = 0.006). Mean follow-up time was similar in two groups (498 vs 478 days, p = 0.43). Also, secondary endpoint (MACE) occurred significantly fewer times in subgroup of patients that reach OMT (23.08% vs 76% of pts, p = 0.001). Kaplan-Meier survival curve can be seen in figure 1. After subgroup stratification patients that reached at least 50% of target doses in only one or two of class drugs had significantly better prognoses compared to patients without 50% of target dose in any drug class and similar between them. (3.5%vs 2.2% vs 18.8% respectively, p < 0.001). Patients that reach OMT were significantly younger and with better renal function. Other basal characteristics were similar.

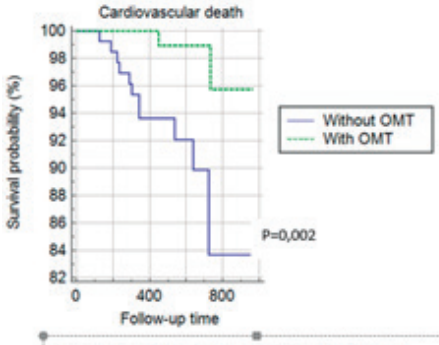

Figure 1- Kaplan-Meier survival curve between groups of patients with OMT and patients without OMT.

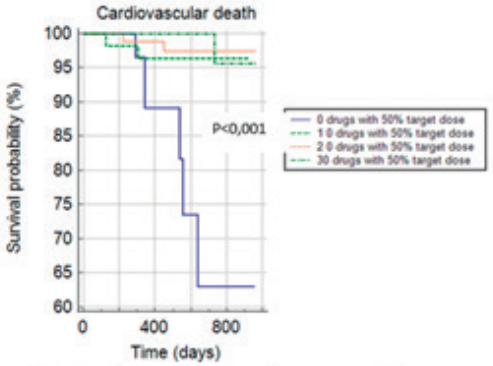

Figure 2- Kaplan-Meier survival curve between groups with diferrent levels of class drugs with at least 50% of target doses

	Patients with OMT (n=125)	Patients without OMT (N= 137)	Significance
Male sex(%)	68	68	P >0,97
Age (years)	**66,18 ±11,58**	**71,91 ±16,42**	**P=0,001**
Weight (Kg)	74,45 ±15,78	69,45 ±14,56	P=0,10
NYHA	2,19 ± 0,577	2,32 ±0,56	P=0,114
APs (mmHg)	120,81 ±20,16	119,81 ±20,31	P=0,476
HR (bpm)	68,78 ±13,87	69,29 ±15,74	P=0,802
Atrial fibrilation (%)	30,5	39	P=0,176
LVEF (%)	31,71 ±8,1	30,19±9,96	P=0,987
Na+ (mmol/L)	139,83 ±2,90	139,44 ±2,72	P=0,28
K+ (mmol/L)	4,64 ±0,48	4,63 ±0,54	P=0,870
GFR(mL/min/1,73m2)	**91,87±33,13**	**72,54**±33,12	**P<0,001**
Time until TMO (days)	406,04 ±226,9	-	-

Table 1- baseline characteristics of two groups of patients. Note: MACE- ocurrence of at least one hospitalization or emergence department visit due to heart faillure exacerbation. AP- arterial pressure; bpm- beats per minute; GFR: glomerular filtration rate; HR- Heart rate; LVEF- Left ventricular ejection fraction NYHA New York Heart association; pts- patients

PO 37 Figure

Conclusions: Our results suggest that reaching OMT of at least one heart failure class can have a significant impact in heart failure prognosis. As expected patients on OMT of all drugs classes had less MACEs and longer survival. Basal renal function and age, but not kalemia, were main predictive factors to reach OMT.

PO 38. WE NEED TO TREAT OUR WOMEN BETTER

Eric Alberto Monteiro[1], José Pedro Barbosa[2], Joana Guimarães[1], Diogo Fernandes[1], Gonçalo Costa[1], Ana Rita M. Gomes[1], Carolina Saleiro[1], Diana Campos[1], José Pedro Sousa[1], João Lopes[1], Luís Puga[1], Rogério Teixeira[1], Carolina Lourenço[1], Marta Madeira[1], Lino Gonçalves[1]

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Introduction: In heart failure (HF) with reduced ejection fraction (HFrEF), neuro-hormonal antagonists (NHA) are recommended for every patient (unless contraindicated) to reduce the risk of HF hospitalization and improve survival. Despite extracting similar benefits, there is a strong concern that women are less frequently treated according to these guidelines. The aim of this study was to compare the prescription of NHA between men and women with acute coronary syndrome (ACS) and HFrEF.
Methods: Retrospective analysis of 168 consecutively admitted patients for ACS, in a single coronary intensive care unit, in which a left ventricular ejection fraction (LVEF) < 40% was present at discharge. Patients were divided into two groups according to sex. Age and relevant comorbidities were assessed using the Mann-Whitney U or χ^2 test (according to variable type) to ensure comparability between groups. Prescription of beta-blockers (BB), angiotensin-converting enzyme inhibitors (ACEI)/angiotensin II receptor blockers (ARB) and mineralocorticoid receptor antagonists (MRA) at discharge was evaluated using the χ^2 test.
Results: In the studied sample, 75% were male (M). Baseline comparison between groups is presented in the table. While there were no significant differences in the prescription of BB and MRA at discharge in M vs F (89.7% vs 84.2% p = 0.388 and 44.0% vs 37.8% p = 0.511, respectively), prescription of ACEI/ARB at discharge was significantly more frequent in M (93.1% vs 76.3%; p = 0.013). Since age between groups was significantly different, binary logistic regression was used to determine whether age might have been a confounding factor in the association between gender and ACEI/ARB prescription. In multivariate logistic regression, significance for age was borderline (OR 0.95; 95%CI 0.89-1.00; p = 0.051), while sex remained significantly associated with the likelihood of having ACEI/ARB prescribed at discharge (OR 3.09; 95%CI 1.06-9.04; p = 0.04).
Conclusions: Our study seems to confirm that women are less likely to receive guideline-directed medical therapy for HFrEF, more specifically ACEI/ARB at discharge. More effort is needed to sensitise physicians to prescribe these lifesaving drugs in the female population. Additional studies to assess the prognostic impact of this asymmetry could help in achieving this goal.

PO 39. PREDICTING EARLY IN-HOSPITAL OUTCOMES IN ACUTE HEART FAILURE

Sofia B. Paula

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: Risk stratification at admission of patients (P) with acute heart failure (AHF) may help predict in-hospital complications and needs. The Get With The Guidelines Heart Failure score (GWTG-HF) predicts in-hospital mortality (M). ACTION ICU score estimates the risk of complications requiring ICU care in NSTEMI.
Objectives: Validate ACTION-ICU score in AHF and compare ACTION-ICU and GWTG-HF scores as predictors of in-hospital M (IHM), post discharge early M [1-month mortality (1 mM)] and 1-month readmission (1 mRA).
Methods: Based on a single-center retrospective study, data collected from P admitted in the Cardiology department with AHF between 2010 and 2017. P without data on previous cardiovascular history or uncompleted clinical data were excluded. Statistical analysis used chi-square, non-parametric tests, logistic regression analysis and ROC curve analysis.

	Men (n=126)	Women (n=42)	P value
Age – years	69.5±12.8	77.2±10.3	<0.001
Hypertension - %	73.8	83.3	NS
Diabetes - %	39.7	42.9	NS
Dyslipidemia - %	71.4	61.9	NS
Chronic kidney disease - %	28.6	31.0	NS
Coronary artery disease - %	47.6	35.7	NS
Previous percutaneous coronary intervention - %	29.6	22.0	NS
Previous coronary artery bypass grafting - %	14.4	4.8	NS
Previous stroke - %	9.5	7.1	NS
Previous heart failure - %	31.7	40.5	NS
Left ventricular ejection fraction - %	31.1±6.4	28.5±9.2	NS
ST-Elevation Myocardial Infarction- %	48.7	51.4	NS
Non-ST segment elevation myocardial infarction- %	36.7	41.4	NS
Unstable angina - %	14.5	5.8	NS
Creatinine at admission - µmol/L	100.2 (IQR 75.1-137.1)	91.4 (IQR 69.8-127.0)	NS
Cardiorenal Syndrome - %	25.2	28.6	NS
Dialysis - %	6.4	2.4	NS
Beta-blocker at discharge - %	89.7	81.6	NS
Angiotensin-converting enzyme inhibitors/ angiotensin II receptor blockers at discharge - %	93.1	76.3	0.013
Mineralocorticoid receptor antagonists at discharge - %	44.0	34.2	NS

Table 1: Comparison between groups

PO 38 Figure

Results: 300 P were included, mean age was 67.4 ± 12.6 yo. Mean systolic blood pressure (SBP) was 131.2 ± 37.0 mmHg, BUN 68.8 ± 40.7 mg/dL, Na+ 137.6 ± 4.7 mmol/L, and mean GFR was 57.1 ± 23.5 ml/min. 35.3% were admitted in Killip-Kimball class (KKC) 4. Mean ACTION-ICU score was 10.4 ± 2.3 and mean GWTG-HF was 41.7 ± 9.6. Inotropes' usage was necessary in 32.7% of the P, 11.3% of the P needed non-invasive ventilation (NIV), 8% needed invasive ventilation (IV). IHM rate was 5% and 1mM was 8%. 6.3% of the P were readmitted 1 month after discharge. Older age (p < 0.001), lower SAP (p = 0.035) and need of inotropes (p < 0.001) were predictors of IHM in our population. P in KKC 4 had higher IHM (OR 8.13, p < 0.001). Older age (OR 1.06, p = 0.002), lower SBP (OR 1.01, p = 0.05) and lower LVEF (OR 1.06, p < 0.001) were predictors of need of NIV. None were predictive of need of IV. LVEF (OR 0.924, p < 0.001), lower SBP (OR 0.80, p < 0.001), higher urea (OR 1.01, p < 0.001) and lower sodium (OR 0.92, p = 0.002) were predictors inotropes' usage. GWTG-HF was able to predict IHM (OR 1.12, p < 0.001, CI 1.05-1.19), 1 mM (OR 1.10, p = 1.10, CI 1.04-1.16) and inotropes's usage (OR 1.06, p < 0.001, CI 1.03-1.10), but it was not predictive of 1 mRA, need of IV/NIV. Similarly, ACTION-ICU was able to predict IHM (OR 1.51, p = 0.02, CI 1.158-1.977), 1mM (OR 1.45, p = 0.002, CI 1.15-1.81) and inotropes' usage (OR 1.22, p = 0.002, CI 1.08-1.39), but not 1mRA, need of IV/NIV. ROC curve analysis revealed that GWTG-HF score performed slightly better than ACTION-ICU when predicting IHM (AUC 0.774, CI 0.46-0-90 vs AUC 0.731, CI 0.59-0.88) and 1mM (AUC 0.727, CI 0.60-0.85 vs AUC 0.707, CI 0.58-0.84).
Conclusions: Both scores were able to predict IHM, 1mM and inotropes's usage.

PO 40. GRACE SCORE VS GWTG-HF SCORE: RISK STRATIFICATION IN ACUTE HEART FAILURE

Sofia B. Paula

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: Risk stratification at admission of patients (P) with acute heart failure (AHF) may help predict in-hospital complications and needs. The Get With The Guidelines Heart Failure score (GWTG-HF) predicts in-hospital mortality (M). GRACE score estimates risk of death, including IHM and long-term mortality (M), in NSTEMI.
Objectives: Validate GRACE score in AHF and to compare GRACE and GWTG-HF scores as predictors of IHM, post discharge early and late M [1-month mortality (1mM) and 1-year M (1yM)], 1-month readmission (1mRA) and 1-year readmission (1yRA).
Methods: Based on a single-center retrospective study, data collected from P admitted in the Cardiology department with AHF between 2010 and 2017. P without data on previous cardiovascular history or uncompleted clinical data were excluded. Statistical analysis used chi-square, non-parametric tests, logistic regression analysis and ROC curve analysis.
Results: 300 P were included, mean age was 67.4 ± 12.6 yo. Mean systolic blood pressure (SBP) was 131.2 ± 37.0 mmHg, BUN 68.8 ± 40.7mg/dL, Na+ 137.6 ± 4.7 mmol/L, and mean GFR was 57.1 ± 23.5 ml/min. 35.3% were admitted in Killip-Kimball class (KKC) 4. Mean GRACE was 147.9 ± 30.2 and mean GWTG-HF was 41.7 ± 9.6. Inotropes' usage was necessary in 32.7% of the P, 11.3% of the patients needed non-invasive ventilation (NIV), 8% needed invasive ventilation (IV). IHM rate was 5%, 1mM was 8% and 1yM 27%. 6.3% of the patients were readmitted 1 month after discharge and 52.7% had at least one more admission in the year following discharge. Older age (p < 0.001), lower SBP (p = 0.005), higher urea (p = 0.001), lower sodium (p = 0.005), PCI intervention (p = 0.017), lower GFR (p < 0.001) and need of inotropes (0.001) were predictors of 1yM after discharge. P in KKC 4 had higher IHM (OR 8.13, p < 0.001), 1mM (OR 4.13, p = 0.001) and 1yM (OR 1.96, p = 0.011). KKC at admission did not predict readmission (either 1mRA or 1yRA, respectively p = 0.887 and p = 0.695). GWTG-HF was a good predictor of IHM (OR 1.12, p < 0.001) but also 1mM (OR 1.1, p = 0.001) and 1yM (OR 1.08, p < 0.001). GRACE also predicted IHM (OR 1.06, p < 0.001), 1mM (OR 1.04, p < 0.001) and 1yM (OR 1.03, p < 0.001). ROC curve analysis revealed that GRACE and GWTG-HF were accurate at predicting IHM (AUC 0.866 and 0.774, respectively), 1mM (AUC 0.779 and 0.727, respectively) and 1yM (AUC 0.676 and 0.672, respectively). Both scores failed at predicting 1mRA (GRACE p = 0.463; GWTG-HF p = 0.841) and 1yRA (GRACE p = 0.244; GWTG-HF p = 0.806).
Conclusions: Both scores predicted IHM, GRACE performing better. Their performance predicting post-discharge mortality outcomes was poorer.

PO 41. PAMI SCORE IN ACUTE HEART FAILURE PATIENTS: AN ADDITIONAL VALUE?

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Introduction: PAMI score is a validated and established tool used to stratify and predict mortality risk in ST-elevation myocardial infarction patients. However, PAMI score capability to predict mortality in heart failure patients has not been validated.
Objectives: Validation of the PAMI score as a predictive tool of mortality in patients admitted with new-onset acute heart failure in a peripheral centre.
Methods: Single-centre retrospective study, engaging patients hospitalized for *de novo* acute heart failure with reduced ejection fraction between 1/01/2010-31/12/2017. All patients' clinical data were extracted at admission and the follow-up occurred in our centre. PAMI score was assessed at admission. Patients were divided in three groups, according to PAMI score: group A < 5 points, B 5-8 points and C > 8. All patients included in this analysis had a Killip-Kimball class ≥ III, then this variable was excluded in the PAMI score calculation and the maximum punctuation was 11 points and the minimum 0 points. Chi-square and ANOVA tests were used to compare categorical and continuous variables. Logistic regression was performed to assess the relationship between the PAMI score and mortality, stroke incidence and re-admission for all causes after discharge. To evaluate the survival rates between groups Kaplan-Meier method was used (log-rank test).
Results: 300 patients were included, 72.7% were male, mean age 67.42 ± 12.57 years with 41.68 ± 34.18 months of follow-up, left ventricular ejection fraction (LVEF) of 33.72 ± 12.19 and a mean GRACE score 4.33 ± 3.35. The three groups were similar regarding gender, rhythm at admission, LVEF, re-admission rates and stroke rates during the follow-up. As expected, the categorization of patients in three groups, revealed significant differences between the groups,

Figure 1: Mortality rates in new-onset heart failure patients represented according to with PAMI score.

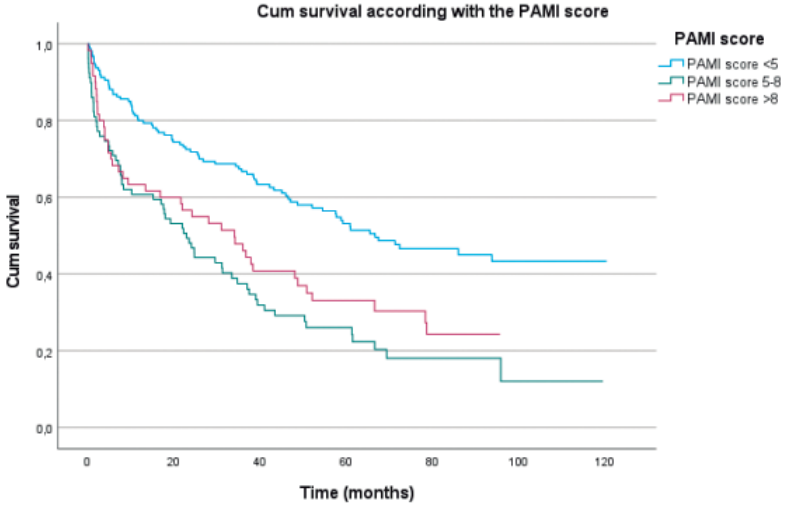

Figure 1

Figure 2: Re-admission rates for all causes in new-onset heart failure patients represented according with PAMI score.

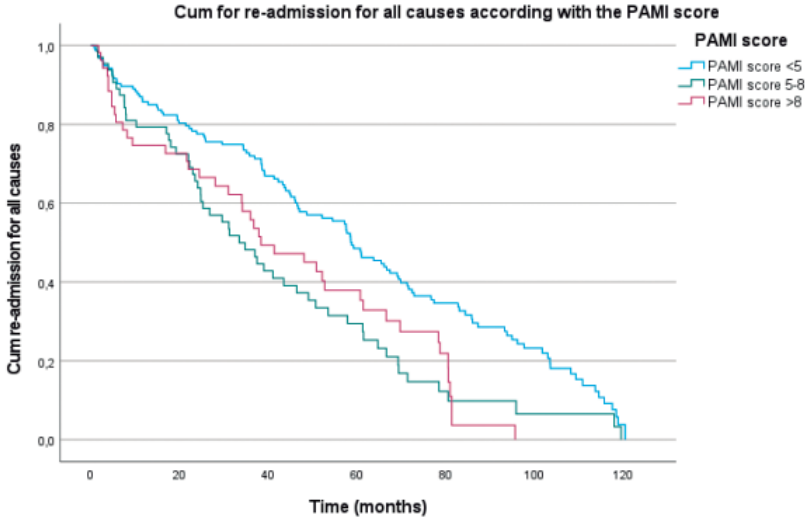

Figure 2

namely in mean age (59.09 ± 10.74, 74.58 ± 6.51, 80.00 ± 3.59, *p* < 0.001), PAMI score and survival rates (50.00%, 78.51%, 70.48%, p < 0.001). Logistic regression revealed that PAMI score was a predictor of mortality (*odds ratio* 1.173, p < 0.001, confidence interval 1.088-1.265), nevertheless it was not associated with re-admission for all causes (p = 0.669) or stroke incidence (p = 0.87). Mortality rates significantly increase with the PAMI score, with a Kaplan-Meier test of p < 0.001 (Figure 1). Curiously, Kaplan-Meier test showed significant differences, (p < 0.001), between the three groups (Figure 2). On the other hand, stroke incidence during the follow-up was not significant, (p = 0.427), by the Kaplan-Meier method.

Conclusions: PAMI score, largely implemented in acute coronary syndromes, proved to be a relevant predictor of mortality in new-onset heart failure patients with reduced ejection fraction.

PO 42. EFFECTIVENESS AND SAFETY OF SACUBITRIL/VALSARTAN IN PATIENTS WITH STAGE 4 CHRONIC KIDNEY DISEASE IN A REAL-WORLD POPULATION

Sara Couto Pereira[1], João R. Agostinho[2], Tiago Rodrigues[2], Pedro Silvério António[2], Nelson Cunha[2], Joana Brito[2], Pedro Alves da Silva[2], Ana Margarida Martins[2], Joana Rigueira[2], Rafael Santos[2], Nuno Lousada[2], Fausto J. Pinto[2], Dulce Brito[2]

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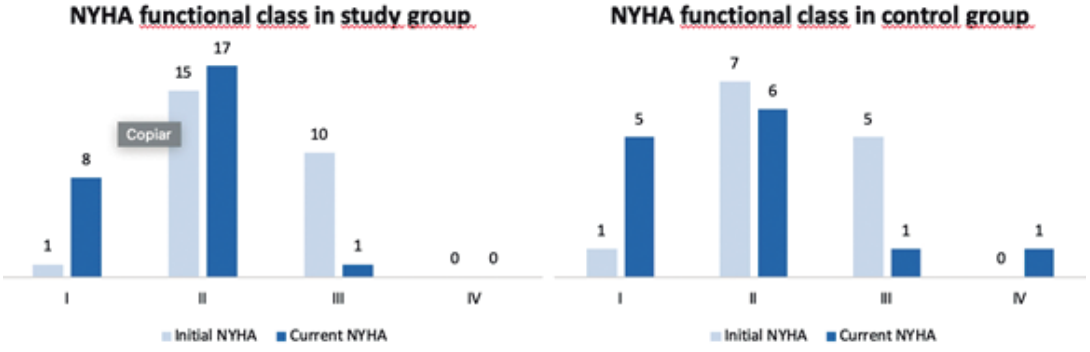
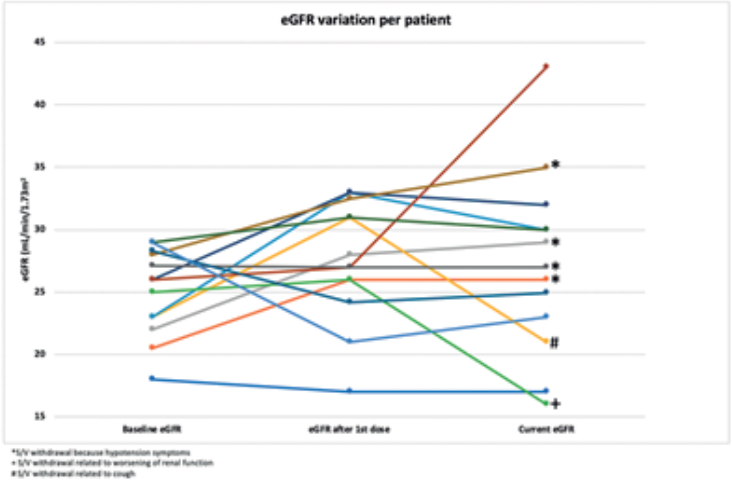
Introduction: The PARADIGM-HF Trial showed that Sacubitril/valsartan (S/V) reduced mortality and hospital admissions when compared to enalapril in patients (pts) with heart failure with reduced ejection fraction (HFrEF). However, pts with estimated glomerular filtration rate (eGFR) < 30 mL/min/1.73 m² were excluded from the trial and data regarding effectiveness and safety of S/V in this subgroup of pts is scarce.

Objectives: To evaluate the effectiveness and safety of S/V in pts with CKD stage 4 in a HFrEF real-world population.

Methods: Nested case control study of HFrEF pts on S/V followed in a Heart Failure Clinic. The study group (SG) was composed of pts with eGFR< 30 mL/min/1.73 m² before starting S/V and the control group (CG) was composed of pts with eGFR> 30 mL/min/1.73 m² at the same time frame, matched for NYHA functional class, left ventricular ejection fraction (LVEF), age, NT-proBNP and HFrEF etiology. A ratio of 2 CG pts to 1 SG pt was used. Pts with CKD stage 5 (< 15 mL/min/1.73 m²) were excluded. Effectiveness was evaluated by improvement in NYHA class, LVEF and HF admissions and death rates reduction. Follow up time was 617 (279-855) days. The safety outcome was defined by any adverse event leading to drug discontinuation.

Results: From a cohort of 191 HFrEF pts on S/V, 13 pts with eGFR< 30 and > 15 mL/min/1.73 m² were identified (76.9% men; median age 71 IQR 67.5-77; 53.8% NYHA II; median LVEF 28% IQR 21-30.5). The CG had 26 pts (92.3% men; median age 69.5 IQR 66-77.5; 57.7% NYHA II; median LVEF 30% IQR 25-34; 50% had CKD stage 3). There were no significant differences regarding NYHA class, LVEF, age, NT-proBNP or HFrEF etiology (p = NS).There was a similar LVEF and NYHA class improvement in both groups (p = NS). There were no differences regarding acute HF or all-cause hospital admissions (p = 0.676) or mortality (2 SG pts died vs. 3; p = 0.691). During follow-up, there were significantly higher rates of S/V withdrawal in the SG (5 (38.5%) vs. 2 pts (7.7%); p = 0.018). The most common S/V drug withdrawal cause in the SG was symptomatic hypotension (4 vs. 0 pts). However, there were no significant differences between the 2 groups (p = NS) regarding systolic blood pressure either at baseline, after S/V initiation or after achieving S/V maximum tolerated dose. Interestingly, only 1 pt in the SG withdrew S/V therapy due to worsening renal function. Hyperkalemia was not the cause of S/V discontinuation in neither group. Maximum tolerated doses of S/V were significantly lower in the SG (5 pts (38.5%) with 24/26 mg vs. 11 pts (42.3%) with 49/51 mg in CG; p = 0.012).





PO 42 Figure

Conclusions: In this small real-life study, we found that S/V seems to be effective and may be safe to use in pts with CKD stage 4 if rigorous monitoring of potential adverse effects is secured. Although there was more drug utilization limiting adverse effects in these pts, there were no differences in prognostic impactful events. Larger studies are needed to confirm these results.

PO 43. CAN WE PREDICT MORTALITY AND READMISSION RATE IN ACUTE HEART FAILURE TREATED WITH LEVOSIMENDAN?

Gualter Santos Silva, Mariana Ribeiro da Silva, Pedro Gonçalves Teixeira, Pedro Ribeiro Queirós, Mariana Brandão, Diogo Ferreira, Eulália Pereira, Olga Sousa, Adelaide Dias, Daniel Caeiro, Francisco Sampaio, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

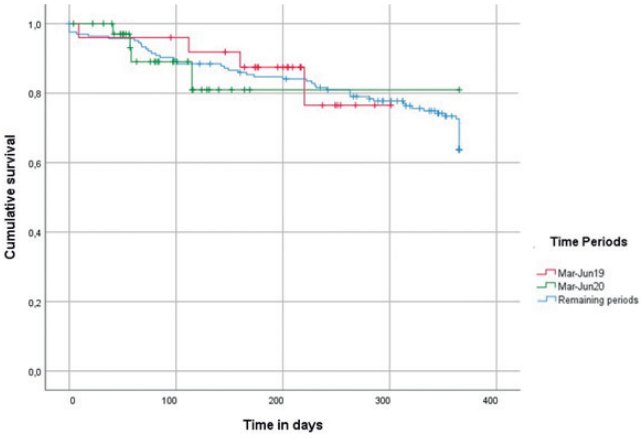
Introduction: Acute heart failure is a complex clinical condition associated with high morbidity and mortality. Its treatment remains a therapeutic challenge, with inotropic agents playing an important role. Levosimendan (LVS) is distinguished from other catecholaminergic inotropic by its three mechanisms of action - inotropic, vasodilator and cardioprotection - and by the presence of a long-acting metabolite.
Objectives: We aimed to characterize the predictors of mortality and readmission rate following acute heart failure hospitalizations treated with LVS.
Methods and Results: This is a retrospective analysis of all 69 patients treated with LVS between January 2015 and August 2019 in a Cardiology Department of a Tertiary Center (84% male, mean age 65 ± 13 years and mean left ventricular ejection fraction 27 ± 12%). 30-day and 6-month mortality was 23.2% and 36.2%, respectively. Risk factors for 30-day mortality ($p < 0.05$) were: obesity (41% vs 17%), absence of valvular heart disease (48% vs 13%) and plasma creatinine (pCr) variation after LVS infusion (+0.05 mg/dL vs -0.24 mg/dL). Patients with ischemic heart disease have higher mortality at 6 months (68% vs 25%, $p = 0.001$). Risk factors for both 30-day and 6-month mortality ($p < 0.05$) were: chronic kidney disease stage ≥ 3 (40% vs 10%; 63% vs 15%), pCr before LSV (1.97 vs 1.43 mg/dL; 1.83 vs 1.48 mg/dL) and pCr after LVS (1.82 vs 1.23 mg/dL; 1.71 vs 1.22 mg/dL). The readmission rate at 30 days and 6 months was 7.4% and 36.0%, respectively. We did not find any significant predictors for 30-day readmission. Factors associated with higher readmission rate at 6 months ($p < 0.05$) were: pre-infusion NYHA class IV (71% vs 30%), decompensated chronic HF (44% vs 9%) and atrial fibrillation or atrial flutter rhythm (56% vs 26%). In 27 cases, pre and post treatment NT-proBNP values were available. LVS therapy significantly reduced NT-proBNP from 10,467 ± 8,984 ng/L to 8,237 ± 9,500 ng/L ($p = 0.012$) and improvement was observed in 93% of patients. Survival at 30 days and 6 months can be predicted by percentage of NT-proBNP improvement (-84.4% vs -28.4%, $p = 0.047$; -92.3% vs -16.3%; $p = 0.012$).
Conclusions: Acute heart failure patients requiring inotropic therapy have high mortality and readmission rates. Several clinical features and analytical response to Levosimendan perfusion are predictors of these events. Furthermore, Levosimendan significantly reduces NT-proBNP. The magnitude of this reduction is a predictor of short- and long-term mortality.

PO 44. HEART FAILURE HOSPITALIZATIONS DURING COVID19 OUTBREAK: IS THE SYSTEM FAILING THE HEART?

Pedro Alves da Silva[1], João R. Agostinho[2], Tiago Rodrigues[2], Nelson Cunha[2], Sara Couto Pereira[2], Pedro Silvério António[2], Joana Brito[2], Beatriz Valente Silva[2], Catarina Oliveira[2], Ana Margarida Martins[2], Ana Beatriz Garcia[2], Fátima Veiga[2], Mónica Mendes Pedro[2], Fausto J. Pinto[2], Dulce Brito[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Heart failure is a highly prevalent syndrome with significant impact on morbidity and mortality. Patient follow up is key in the optimal management of this pathology. Covid-19 outbreak began in March 2020, imposing a high burden on national health services and deeply impacting healthcare. Several questions were raised regarding the undervaluation of non-Covid-19 patients (pts) but the consequences of the pandemic on heart failure admissions in Portugal are not known.
Objectives: To evaluate the impact of Covid-19 on acute heart failure (AHF) hospitalization rates and its clinical characteristics, based on patients' admission in a cardiology ward.
Methods: Single-centre retrospective study of consecutive patients admitted in a cardiology ward between 2019 and 2020. Clinical and laboratorial characteristics were obtained at admission and discharge. Clinical severity was accessed using three different validated risk scores in heart failure pts (MEESSI, GWTG-HF score Risk and COACH score risk).
Results: We gathered 229 patients (pts), 144 (70.8% male, mean age 71.9 ± 12.9 years old) hospitalized in 2019 vs. 85 (67.1% male, mean age 73.2 ± 12.5 years old) in 2020. There were no significant differences between the two groups in terms of baseline clinical characteristics: hypertension was the most common risk factor in both populations (77.8% vs 80.0%), followed by dyslipidaemia (59.7% vs 47.1%) and diabetes mellitus (38.2% vs 36.5%); ischemic cardiomyopathy was the most frequent etiology in both groups (40.0% vs 41.7%). In terms of clinical severity and in-hospital mortality we found no statistically significant differences between the two groups as evaluated by the aforementioned scores: MEESSI (2.62 vs 2.69, $p = 0.57$) and GTWG (49.87 vs 50.02, $p = 0.91$). COACH score for intra-hospital mortality was even higher in 2019 pts ($p = 0.008$). A specific time period between March and June 2020 (corresponding to the initial lockdown period) was defined and we compared it with the homologous period of 2019 and the remaining months. Once again there were fewer admissions in the 2020 period, but no statistically significant differences were found concerning clinical characteristics (namely NYHA, ejection fraction, systolic arterial blood pressure and NT-proBNP plasma values) or severity evaluated by scores: MEESSI ($p = 0.563$), GWTG ($p = 0.258$) and COACH ($p = 0.928$). When analysing survival, the outcomes between the three groups were similar, as represented by Kaplan Meier curves (Figure).



Conclusions: In an initial phase, Covid-19 pandemic led to a reduction in healthcare demand and in hospital admissions for acute heart failure. Contrary to what was hypothesised, no increased clinical severity was found in pts hospitalizes in 2020 pts nor did we note a rise in mortality.

PO 45. DIURETIC DOSE IN CHRONIC HEART FAILURE - THE LOWER THE BETTER?

Sara Borges, José João Monteiro, Pedro Carvalho, Catarina Ribeiro Carvalho, Marta Catarina Bernardo, Miguel Moz, Ana Baptista, Catarina Ferreira, J. Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Heart failure (HF) is a major source of morbidity and mortality and loop diuretics are the most common therapy used to relieve fluid

retention and shortness of breath. Guidelines support the use of diuretics at the lowest clinically effective dose but evidence is scarce about their role in clinical outcomes.
Objectives: To assess the prognostic impact of diuretic dose in chronic heart failure outpatients.
Methods: Retrospective study of (pts) admitted in heart failure clinic of a cardiology center from February/2018 to December/2020, with an initial left ventricular ejection fraction (LVEF) < 40%; The exposure was diuretic dose in mg/kg at admission and after optimal medical therapy (OMT). Primary outcomes were all-cause mortality and a composite of death, HF hospitalizations or emergency department admission.
Results: We included 261 patients (mean age 71 ± 11 years; 69% males; ~40% ischemic etiology). OMT was reached in 69% (193 pts); Median diuretic dose at admission was 0.43 ± 0.3 mg/kg vs 0.23 ± 0.3 mg/Kg after OMT (p < 0.001). Pts with no diuretic were younger (68 vs 72, p = 0.01), have lower NT-ProBNP levels (527 vs 1,087 ng/mL, p < 0.001 and better Left ventricular ejection fraction(43% vs 36%, p < 0.001). After a median follow-up of 17 months (IQR 13-23), 10 patients died (5%) and 32 (17%) had composite endpoint. Diuretic dose after OMT was associated with mortality (HR 3.5, 95%CI: 1.8-6.7, p < 0.001) and with composite endpoint (HR 4.8, 95%CI 3.3-7, p < 0.001). When divided into 0 mg/Kg, 0-1 mg/lh, and > 1 mg/kg categories, there was a stepwise increased risk when compared to 0 mg/kg, with HR 2.6, 95%CI 1.0-6.6 for 0-1 mg/kg and HR 5.1, 95%CI 1.8-14 for > 1 mg/kg (Figure). In the multivariate analysis, after adjusting for age, weight, LVEF and functional class NYHA, diuretic doses was an independent predictor for death (HR 2.4, 95%CI: 1.5 -3.8; p < 0.001) and composite endpoint (HR 2.2, 95%CI: 1.6 -3.1; p < 0.001) in the follow up.

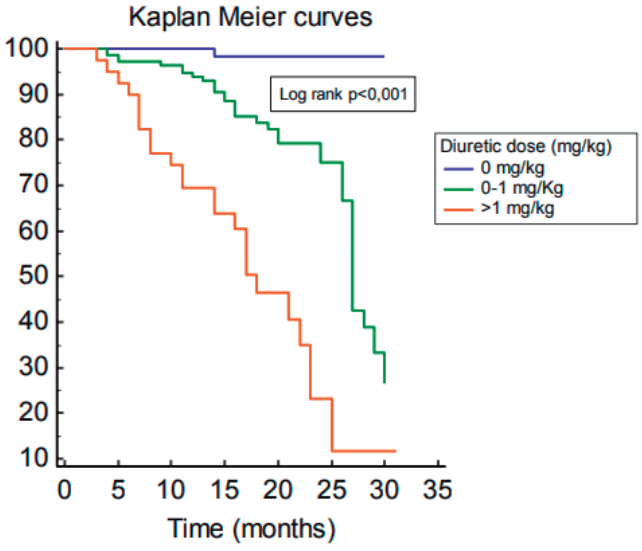


Figure 1 – Kaplan Meier Survival analysis

Conclusions: Diuretic doses in chronic HF pts is a predictor of adverse events and those who remain without diuretic have better prognosis. Further studies are warranted to determine if systematic reduction of diuretic doses in euvolaemic HF patients can lead to improved clinical outcomes.

PO 46. USE OF RENIN-ANGIOTENSIN-ALDOSTERON INHIBITORS (RASSI) AND DOSE-RELATED OUTCOMES IN OLDER ADULTS

Sara Borges, José João Monteiro, Pedro Carvalho, Catarina Ribeiro Carvalho, Marta Catarina Bernardo, Miguel Moz, Ana Baptista, Catarina Ferreira, J. Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Renin-angiotensin-aldosteron inhibitors (RASSi) are recommended as first-line therapy in heart failure (HF) with reduced ejection fraction patients, and should be up-titrated to maximally tolerated or target dose. Their benefit in older patients is less established since they are frequently underrepresented in clinical trials.
Objectives: To determine whether RASSi therapy is beneficial, and the relative benefits of high- relative to lower-dose therapy in routine clinical practice in older patients.
Methods: Retrospective study of consecutive patients admitted in heart failure clinic of a cardiology center from February/2018 to December/2020, with an initial left ventricular ejection fraction (LVEF) < 40%; Primary outcomes were all-cause mortality and a composite of death, HF hospitalizations or emergency department admission; Low dose was defined as < 50% of target dose.
Results: We included 264 patients (mean age 71 ± 11 years; 69% males; ~40% ischemic etiology). Off this, 31% (83 pts) had 80 years or more. Older patients had lower weight (63 ± 12 Kg vs 74 ± 15 Kg p < 0.001, lower haemoglobin levels (13.8 vs 12.5 g/dL, p < 0.001) and higher baseline serum creatinine (0.9 vs 1.1 mg/dL, p < 0.001). Within patients > 80 years, 17% (14) didn't tolerate any dose of RASSi, 27% (22) tolerated low doses and 56% were on high doses of RASSi. After a median follow-up of 17 months (IQR 19-51), 18 patients died (22%) and 36 (43%) had composite endpoint. In elderly, therapy with any dose of RASSi was associated with improved survival (HR 2.4 95%CI 1.1-5.1, log rank p = 0.02). However, when compared with low doses, higher doses does not provide additional reduction in mortality (HR 1.7 95%CI 0.8-3.6, p = 0.187) or in the combined endpoint of death, HF hospitalizations or emergency department admissions (HR 1.2, 95%CI 0.5-2.6, p = 0.658) in this patients.
Conclusions: Our study suggests that RASSi therapy does provide a survival benefit in older patients compared to not receiving any ACE inhibitor therapy but it's unclear if they benefit of target doses. Accordingly, optimal doses for older patients may be lower than those studied in trials or tolerated in younger patients.

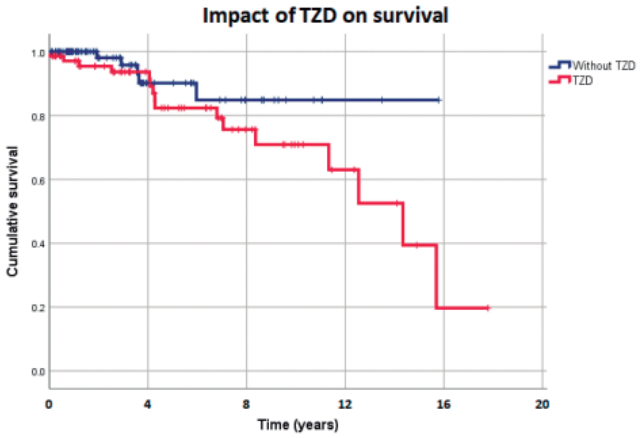
PO 47. SEQUENTIAL NEPHRON BLOCKADE: A BLOCKER IN HEART FAILURE?

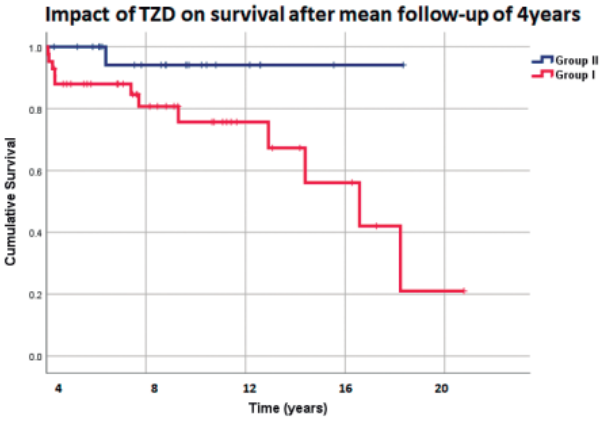
Joana Brito, João Agostinho, Pedro Alves da Silva, Beatriz Valente Silva, Beatriz Garcia, Ana Margarida Martins, Catarina Oliveira, Sara Couto Pereira, Joana Rigueira, Nuno Lousada, Fausto J. Pinto, Dulce Brito

Centro Hospitalar de Lisboa Norte, EPE/Hospital Pulido Valente.

Introduction: In patients (pts) with Heart Failure with reduced ejection fraction (HFrEF), most decompensation episodes are characterized by volume overload requiring diuretic therapy, namely with loop diuretics and sometimes with sequential nephron blockade. Nevertheless, the impact of diuretic therapy on HFrEF prognostic is dubious.
Objectives: To evaluate the impact of thiazides and thiazide like diuretics (TZD) on pts with chronic HFrEF.
Methods: Single-center retrospective study of patients with chronic HFrEF followed in a Heart Failure Ambulatory Unit. From a total population with 532 pts two groups were designed: study group - all pts medicated with TZD; control group - formed by a randomly selected quarter of the remaining population. Clinical and laboratory characteristics in three different time frames: baseline, time of maximal tolerated doses of HFrEF medication and last recorded follow-up visit were collected. The impact of TZD on prognosis was evaluated with Cox regression adjusted for age, left ventricular ejection fraction (LVEF), NT-proBNP, eTFG and NYHA functional class at the three different time frames.
Results: A total of 212 pts (70 ± 13 years, 74.6% males) were included (73 pts in study group and 96 pts in control group). Baseline characteristics between the two groups were similar regarding NYHA functional class (NYHA II 57.5%; NYHA III 34.5%), HFrEF etiology, mean LVEF (28 ± 9%) and mean NT-proBNP (3,674 ± 5,806 pg/mL). eTGF was statistically lower in the study group (57 ± 33 mL/min versus 66 ± 23 mL/min; p 0.07). Although at baseline the number of neurohumoral antagonist therapy classes prescribed per pt was similar between groups (p < 0.56), during follow-up a significant variation was observed and, at the last visit, the study group was under less optimized therapy (p < 0.001). Likewise, during follow-up the study group presented

worse NYHA functional class (p 0.002) and higher NT-proBNP (p 0.40) comparing with the control group. After a mean follow-up of 4.2 ± 3.9 years, mortality rate was 21.9% in study group and 5.2% in the control group, and heart failure hospitalization rate was 41.4% and 26.6%, respectively. Despite not being associated with heart failure or all-cause admissions (p = NS), TZD was an independent predictor of death on multivariate analysis (p 0.024, 95% IC 0.63-0.81, OR 0.27). On Kaplan-Meier survival analysis a negative impact on mortality becomes apparent as the follow-up time increases and becomes statistically significant after the 4th year of follow-up (p 0.047; Figure).





Conclusions: Despite its role in HFrEF descompensation treatment and in keeping pts euvolemic, this study suggests that on the long term SNB using TZD may be deleterious and lead to higher mortality. These results also suggest that in HFrEF pts TZD may hinder therapy optimization and thus other drugs with diuretic properties, such as iSGLT2 or high dose sacubitril-valsartan may be more appropriate.

Virtual Posters | Posters - C. Arrhythmias and Device Therapy

PO 48. PERICARDIAL FLUID AND SERUM NT-PRO-BNP AND GDF-15 IN PATIENTS WITH ATRIAL FIBRILLATION SUBMITTED TO AORTIC VALVE REPLACEMENT SURGERY

Mariana Fragão-Marques[1], Isaac Barroso[2], Rui Farinha[2], Isabel Miranda[1], Diana Martins[1], Jennifer Mancio[1], João Rocha-Neves[2], João Tiago-Guimarães[2], Inês Falcão-Pires[1], Adelino Leite-Moreira[1]

[1]Faculdade de Medicina da Universidade do Porto. [2]Centro Hospitalar Universitário de São João.

Introduction: Growth Differentiation Factor-15 (GDF-15) has been reported as a potential predictor of atrial fibrillation (AF). Moreover, NT-proB-type natriuretic peptide (NT-pro-BNP) has been consistently associated with AF, including in hypertrophic cardiomyopathy. This study aimed to evaluate the association of GDF-15 and NT-pro-BNP in two different biological matrices with persistent AF in severe aortic stenosis patients submitted to aortic valve replacement surgery (AVR), its association with atrial matrix remodeling, as well as with 30-day postoperative outcomes.
Methods: A posthoc analysis of a prospective study on a cohort of aortic stenosis patients was performed. 126 patients with severe aortic stenosis submitted to AVR surgery in a tertiary hospital were assessed, between 2009 and 2019.
Results: GDF-15 and NT-pro-BNP were increased in AF patients with aortic stenosis when measured in the pericardial fluid (p = 0.030). NT-pro-BNP was increased in AF patients in pericardial fluid (p < 0.001) and in serum (p = 0.002). Moreover, when measuring AUROC (area under the ROC curve) pericardial fluid NT-pro-BNP, pericardial fluid NT-pro-BNP had the highest area (0.85 [0.75-0.96]). Pericardial fluid and serum GDF-15 were significantly increased in acute kidney injury (AKI) (p = 0.027 and p = 0.015, respectively). COL1A1 and COL3A1 gene expression increased when pericardial fluid NT-pro-BNP values were higher (p = 0.005 and p = 0.033, respectively). In addition, TIMP4 was positively correlated with pericardial fluid GDF-15 (p = 0.025).
Conclusions: Persistent AF in severe aortic stenosis was associated with increased levels of pericardial fluid GDF-15 and serum and pericardial fluid NT-pro-BNP. NT-pro-BNP in the pericardium had a higher diagnostic accuracy than its serum counterpart. AKI after AVR surgery was associated with higher quantifications of both serum and pericardial fluid GDF-15. Collagen type I, collagen type III as well as MMP2 and TIMP4 atrial gene expression were positively correlated with pericardial fluid NT-pro-BNP and pericardial fluid GDF-15, respectively.

PO 49. SAFETY AND EFFICACY OF IDIOPATHIC OUTFLOW TRACT VENTRICULAR ARRHYTHMIAS ABLATION

Inês Almeida[1], Ana Lousinha[2], Pedro Silva Cunha[2], Bruno Valente[2], Guilherme Portugal[2], Madalena Cruz[2], Ana Sofia Delgado[2], Ana Almeida[2], Rui Cruz Ferreira[2], Mário Oliveira[2]

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Introduction: Outflow tract (OT) ventricular arrhythmias (VA) in the setting of a structurally normal heart is a common entity, usually associated with good prognosis. However, recent evidence reporting their association with heart failure and death, together with the disappointing results of antiarrhythmic drug therapy, highlights the role of catheter ablation.
Objectives: Evaluation of idiopathic OT VA ablation performance and long-term follow-up (FU).
Methods: Single centre retrospective analysis of patients (P) admitted for idiopathic OT VA ablation. Structural heart disease was excluded by echocardiography and/or cardiac magnetic resonance. Demographic and clinical characteristics, procedure data and outcomes were evaluated.
Results: 67P were enrolled (79.1% female; 43.4 ± 17.9 years). ECG or 24h-Holter recording documented ventricular tachycardia (VT) in 22.4% (sustained VT in 6.0% and non-sustained VT in 16.4%) and frequent ventricular ectopic complexes (VEC) in 64.2%, with a morphology suggesting OT origin. In 13.4% there were both non-sustained VT and frequent VEC. Most P were symptomatic (96.7%): 68.8% presented palpitations, 14.8% presyncope/syncope and 13.1% fatigue. Ablation procedure included 3D-reconstruction of ventricular geometry, followed by acquisition of maps during sinus rhythm and VEC beats or VT to identify the earliest activation points. In 74.6% a non-contact multi-electrode balloon catheter was used. The origin of VA was in the right ventricle OT in 86.6%. A mean of 8.5 ± 5.7 applications (mean radiofrequency time of 11.0 ± 8.3 min) was delivered to the target sites. The most common sites of early activation, with a mean time of precocity of 58.7 ± 75.2 msec and a pacemapping match of 96.4 ± 4.9%, were the posterolateral (14.1%) and anterolateral (10.9%) regions. One third of the P presented > 1 target site. Mean fluoroscopy time was 10.9 ±

9.5 min. In 86.6% a total elimination of VEC was obtained and in 6% there was a significant reduction of VEC. In 4 cases, the procedure was complicated due to pericardial effusion (n = 1), cardiac tamponade (n = 2) and a pseudo-aneurysm of the femoral artery (n = 1). During a mean follow-up of 28 months, most P (86.6%) remained asymptomatic, in 25.8% of the cases without medication. In P with VA recurrence, there was a 66.1% reduction in VEC burden after ablation. Re-ablation due to symptomatic VEC recurrence, with a mean time until re-ablation of 1.5 ± 1.7 years, was performed in 13.4% of cases. None of the evaluated parameters (demographic, clinical presentation, origin and type of VA, number of VEC) or procedural data allowed to predict a successful procedure.
Conclusions: Idiopathic OT VA ablation is a highly effective and safe procedure, with a low rate of long-term recurrence.

PO 50. RIGHT VENTRICULAR SEPTAL VERSUS APICAL PACING: LONG-TERM INCIDENCE OF HEART FAILURE AND SURVIVAL

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Introduction: Optimal right ventricular pacing site remains controversial. Previous studies comparing right ventricular septal (RVS) and apical (RVA) pacing have small sample sizes or short follow-up.
Objectives: We aimed to compare the long-term incidence of heart failure (HF) and all-cause death in patients submitted to RVS and RVA pacing.
Methods: We retrospectively studied consecutive patients submitted to pacemaker implantation at a tertiary hospital between 1st January and 31st July 2015.
Results: Of 168 patients (78 [70-84] years, 52% male), ventricular lead was placed in apical position in 136 (81%) and in septal position in 32 (19%). Individuals with RVS pacing were younger (72 [63-81] versus 79 [72-86] years, p = 0.001) and had higher prevalence of male gender (78% versus 46%, p = 0.001) and atrial fibrillation (56% versus 36%, p = 0.03). Median radiation time during procedure was 3 (2-6) minutes, similar between groups (p = 0.60). Incidence of complications related to the procedure was low: one deep venous thrombosis of the superior limb in the RVA pacing group, one pocket infection and two diaphragm stimulation requiring lead repositioning (one atrial lead and one ventricular lead) in the RVS pacing group and one significant pocket haematoma in each group. During a median follow-up of 61 (32-65) months, all-cause death was 36%, lower in RVS pacing group (19% versus 40%, log rank test p = 0.02). Global incidence of HF was 40% (septal: 32%, apical: 42%, p = 0.23). Mean QRS duration with ventricular pacing was lower in RVS pacing group (160 [15] versus 173 [20] milliseconds, p = 0.03). LV systolic function during follow-up was preserved in 67% of patients, similar between groups. More patients from the RVS pacing group were submitted to upgrade to cardiac resynchronization therapy (10% versus 2%, p = 0.02). In multivariate analysis, only age was an independent predictor of all-cause death (HR 1.08, 95%CI 1.04-1.14). Independent predictors of HF were significant aortic valve stenosis (HR 2.40, 95%CI 1.01-5.73), pericardial effusion (HR 9.87, 95%CI 1.25-77.73), LV hypertrophy (HR 2.45, 95%CI 1.10-5.44) and LV systolic function (if not preserved, HR 2.58, 95%CI 1.04-6.41) during follow-up.
Conclusions: In our cohort, although patients submitted to RVS pacing had lower mortality, it was not identified as an independent predictor of all-cause death or HF during a 5-year follow-up time. Procedural complications were infrequent and non-life-threatening.

PO 51. OPTIMAL PERCENTAGE OF BIVENTRICULAR PACING TO OBTAIN CRT-RESPONSE: HOW HIGH IS HIGH ENOUGH

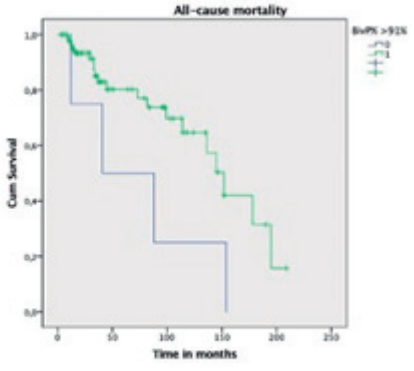
Ana Fátima Esteves[1], Leonor Parreira[1], Dinis Mesquita[1], Marta Fonseca[1], José Maria Farinha[1], Antonio Pinheiro Cumena Candjondjo[1], Joana Silva Ferreira[1], Rui Antunes Coelho[2], Pedro Amador[1], Artur Lopes[1], Nuno Fonseca[1], Rui Caria[1]

[1]Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo. [2]Centro Hospitalar de Setúbal/ACES Arrábida.

Introduction: The greatest benefit with cardiac resynchronization therapy (CRT) is achieved when biventricular pacing (BivP) percentage (%) is close to 100%. However, in some patients that goal can be challenging to obtain.
Objectives: We sought to determine whether a lower BivP% could lead to similar outcomes in terms of CRT response and events, as compared with patients with BivP% more than 98%.
Methods: Patients with CRT followed up in a remote-monitoring network were retrospectively analyzed. BivP% was assessed overtime and response to CRT was defined as an absolute increase in left ventricle (LV) ejection fraction (EF) > 5% or a relative increase in LVEF > 15% or an increase of LV end-diastolic volume (LVEDV) > 15%. Low BivP% was defined as ▫98%. Clinical, echocardiographic data and all-cause death during follow-up were evaluated. Receiver operator characteristics (ROC) curve and area under the curve (AUC) were obtained to determine the discriminative power of BivP% as predictor of CRT response. Optimal cut-point value was obtained (Youden index) and patients were divided according to this value. Kaplan-Meyer survival function was used to compare survival in the different groups and the Log-rank test was used for comparison between the groups.
Results: 88 patients, 76% male, median age 73.5 (IQR 65.75-79.25) years had an implanted CRT device, with defibrillator capacity in 69%. Etiology was ischemic in 44% and idiopathic in 38% patients. 61% patients were under optimized medical therapy (OMT), 93% under beta-blockers and 39% were taking angiotensin receptor-neprilysin inhibitors (ARNI). Median LVEF before CRT was 27% (IQR 20.25-32) and median LVEDV was 201 mL (IQR 160-236.5). 44 patients (50%) had low BivP% (median 91%, IQR 96-99) during follow-up, 55% due to atrial fibrillation (AF) and 52% due to frequent premature

	BivP <91% (n=4)	BivP >91% (n=84)	p-value
BivP, median (IQR)	85 (62.5-88.75)	99 (98-100)	0.001
Age in years, median (IQR)	72.50 (70.50-73.75)	74.00 (65.00-80.00)	0.666
CRT-D, n (%)	3 (75.0)	58 (69.0)	0.999
Ischemic cardiopathy, n (%)	3 (75.0)	35 (41.7)	0.311
Dilated idiopathic cardiomyopathy, n (%)	0 (0.0)	33 (39.3)	0.292
LVEF before CRT, median (IQR)	27 (19-39)	27 (20-32)	0.795
LVEDV in mL, median (IQR)	187 (168-212.5)	201 (155-237.25)	0.926
OMT, n (%)	4 (100.0)	50 (61.0)	0.292
Beta-blockers, n (%)	4 (100.0)	78 (95.1)	0.999
Antiarrhythmic drugs, n (%)	2 (50.0)	34 (41.5)	0.999
ARNI, n (%)	2 (50.0)	32 (39.0)	0.646
AV-node ablation, n (%)	0 (0.0)	11 (13.1)	0.999
AF history, n (%)	2 (50.0)	59 (70.2%)	0.583

Table



Figure

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ventricular complexes (PVC). Atrioventricular (AV) node ablation was performed in 11 patients and AF ablation in 2 patients. After optimization of medical therapy, device programming and/or interventional procedures, we obtained a BivP > 98% in 26 out of the 44 patients (59%). However, in 18 patients (20%) BivP% was < 98% (median 95, IQR 92.25-96). 66% patients were CRT responders. Median follow-up was 36 (IQR 23.75-84) months. During follow-up, 11 (13%) patients were hospitalized for HF and mortality was 27% (24 patients). Optimal cut-point value for predicting CRT response was 91% BivP% (AUC 0.644, p-value 0.047, 95%CI 0.496-0.792). The characteristics of the two groups didn't differ significantly (Table). Survival was significantly higher in patients with BivP% > 91% (Log-rank 3.667, p-value 0.050) (Figure).
Conclusions: In this population, a biventricular pacing > 91% was sufficient to achieve CRT-response and was associated with a better survival.

PO 52. THREE-DIMENSIONAL LATE GADOLINIUM ENHANCEMENT INCREASES THE DIAGNOSTIC YIELD OF CARDIOVASCULAR MAGNETIC RESONANCE TO DETECT LOW VOLTAGE IN THE RIGHT VENTRICULAR OUTFLOW TRACT

Leonor Parreira[1], António Ferreira[2], Pedro Carmo[2], Dinis Mesquita[1], Rita Marinheiro[1], Pedro Amador[1], José Farinha[1], Ana Esteves[1], Silvia Nunes[2], Duarte Chambel[1], Marta Fonseca[1], Diogo Cavaco[2], Francisco Costa[2], Hugo Marques[2], Pedro Adragao[2]

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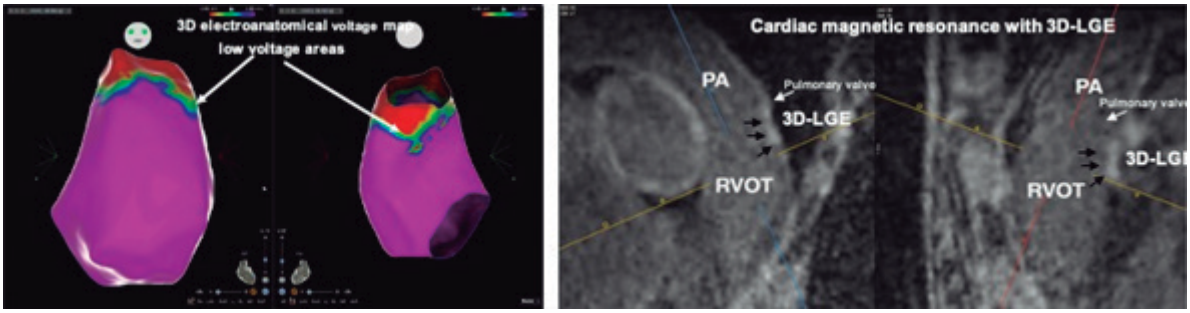
Introduction: Cardiac magnetic resonance (CMR) using late gadolinium enhancement (LGE) fails to detect scar tissue in patients with abnormalities on the three-dimensional (3D) electroanatomical map and biopsy-proven structural heart disease. It has shown conflicting data regarding existence of structural abnormalities in patients with idiopathic premature ventricular contractions (PVCs) from the right ventricular outflow tract (RVOT). 3D-LGE enables high-spatial resolution more appropriate to the thin-walled right ventricle than two-dimensional (2D) LGE.
Objectives: Our aim was to evaluate if the use of 3D-LGE would improve the performance of CMR to detect low voltage areas in the RVOT of patients with PVCs.
Methods: Since May 2020 we performed 3D-LGE CMR in 11 consecutive patients that underwent ablation of frequent PVCs. A control group of 11 consecutive patients that underwent catheter ablation by the same operator and had a 2D-LGE CMR performed before ablation was also studied. All patients had normal 2D-LGE CMR. A 3D electroanatomical bipolar voltage map of the RVOT was performed in sinus rhythm (0.5 mV-1.5 mV colour display). Areas with electrograms < 1.5 mV represented the low voltage areas (LVAs). The area adjacent to the pulmonary valve usually displays voltage between 0.5 and 1.5 mV and is classified as transitional-voltage zone. Presence of LVAs outside this transitional-voltage zone were estimated. We compared the accuracy of CMR for detecting LVA in the two groups: 3D LGE and 2D LGE.
Results: The median number of points used for the voltage map was 344 (242-450). The site of origin of the PVCs was the RVOT in 17 patients and the left ventricular outflow tract (LVOT) in 5. The two groups did not differ in relation to age, gender, site of origin of the PVCs and number of points used for the voltage map. LVAs were present in 18 patients (82%), 9 in the 3D-LGE group and 9 in the 2D-LGE group, p = 0.707. In the 2D LGE group CMR failed to demonstrate abnormalities of the RVOT in all patients that presented with LVAs. In the 3D-LGE group CMR showed presence of fibrosis (Figure) in 3 out of 9 patients with LVAs (33%).
Conclusions: CMR using 3-D LGE techniques showed an increased power to diagnose structural abnormalities. This technique may be a better choice in initial stages of RVOT disease.

PO 53. LOW-FLUORO WORKFLOWS AND IMPACT IN RADIATION EXPOSURE IN THE ELECTROPHYSIOLOGY LABORATORY

Vera Ferreira, Guilherme Portugal, Madalena Coutinho Cruz, Pedro Silva Cunha, Bruno Valente, Ana Lousinha, Alexandra Castelo, Pedro Garcia Brás, José Viegas, Ana Sofia Almeida, Cátia Milene Guerra, Margarida Paulo, Rui Cruz Ferreira, Mário Oliveira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: During electrophysiology (EP) procedures, fluoroscopy imaging is employed to visualize catheters position in real-time. However, ionizing radiation is a health hazard to both the patient and operator. In recent years, the use of electroanatomical mapping systems and operator adoption of low-fluoro workflows has allowed a reduction of radiation exposure. The aim of this study was to assess the evolution of fluoroscopy time (FT) in EP procedures, using conventional technique or an electroanatomical mapping system (EMS).
Methods: A retrospective analysis of consecutive EP procedures performed at a tertiary centre between September 2018 and October 2020 was conducted. The procedures were divided in 3 tertiles according to date (T1, T2 and T3), with T3 corresponding to the most recent interventions. Procedural duration, FT, use of EMS, radiofrequency time (RT), acute ablation success and procedural complications were examined.
Results: A total of 615 procedures were analysed: atrioventricular node reentry tachycardia (AVNRT) – n = 144, accessory pathways (AP) – n = 83, typical atrial flutter – n = 106, atrial fibrillation (AF) ablation with radiofrequency (RF) – n = 61, AF ablation with cryoballoon – n = 92, ablation of ventricular arrhythmias – n = 53, and 75 miscellaneous procedures (including atrioventricular node ablation, left atrial flutter ablation and cardioneuroablation). Mean age was 54.6 ± 18.2 years with 59.4% male sex patients. An EMS was used in 75% of the procedures, without significant differences between tertiles. A progressive reduction in median FT was observed over the tertiles (T1 6.3 min, interquartile range [IQR] 2.9-13.6; T2 5.4 min, IQR 2.1-12.0, and T3 3.1 min, IQR 1.2-7.2, Figure 1), and a statistical significant difference was found when comparing T1 to T3 (p < 0.001) and T2 to T3 (p < 0.001). The decrease in FT was observed throughout the study period for all different EP procedures (Figure 2). The number of procedures with zero fluoroscopy had gradually increased (T1 6.1%, T2 8.5% and T3 14.1%; T1 vs. T3 p < 0.01). Younger patients (< 20 years) were submitted to low fluoroscopy doses with a significant decrease over tertiles (T1 1.2 min, IQR 0.0-4.3; T2 0.9 min, IQR 0.0-2.5; T3 0.0, IQR 0.0-2.2, T1 vs.T3 p < 0.001). No significant difference in procedural duration, RT, acute procedural success or complication rate were noted between tertiles.



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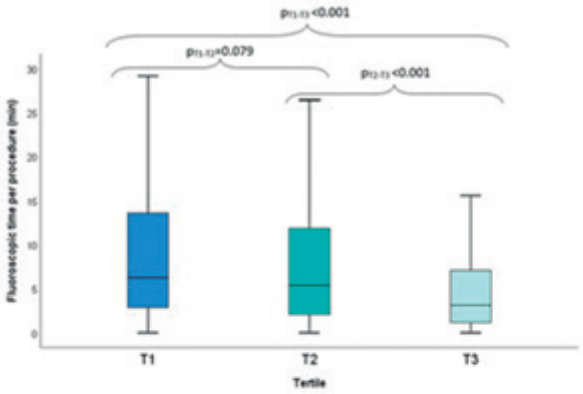

Figure 1 Comparison of median fluoroscopic time per procedure over the tertiles.

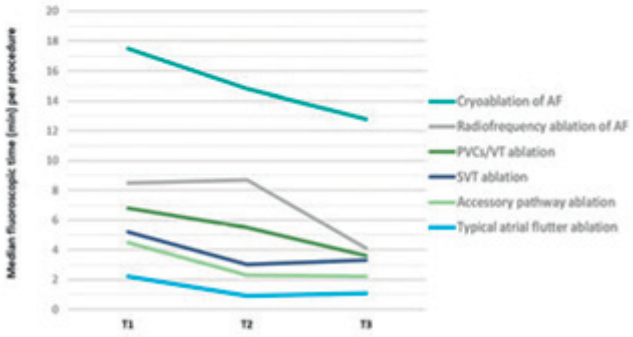

Figure 2 Median fluoroscopic time over the tertiles for each type of procedure.

Conclusions: Reduction in radiation exposure can be achieved without compromising duration, safety and effectiveness of the procedure. The commitment of operators to reduce radiation exposure using 3D mapping technology can lead to a significant decrease in the use of fluoroscopy.

PO 54. A QUESTION OF TIME: ABLATION INDEX MAY SPARE THE WAITING PERIOD AFTER PULMONARY VEIN ISOLATION

Diana Decampos[1], Pedro Sousa[1], Luís Elvas[1], Ziad Lhoueiry[2], Philippe Lagrange[2], João Primo[3], Paulo Fonseca[3], Luís Adão[4], Ana Lebreiro[4], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra. [2]Centre Hospitalier de Perpignan. [3]Centro Hospitalar de Vila Nova de Gaia/Espinho. [4]Centro Hospitalar Universitário de São João.

Introduction: Spontaneous pulmonary vein (PV) reconnection is a time-dependent process. A waiting phase of 20-30 min is a guideline recommendation. Nevertheless, data supporting this recommendation mostly arise from studies without contact force-sensing ablation catheters. A new software called "Ablation Index" (AI) has been developed for utilization during PVI, potentially allowing a higher acute success.
Objectives: To assess if the new software AI can spare the required waiting period after PVI.
Methods: This multicentre, prospective, randomized study consecutively recruited patients referred for first-time catheter ablation of symptomatic drug-refractory paroxysmal AF. Patients were enrolled in 1:1 ratio to PVI with AI and 20 min of waiting time versus PVI with AI without a waiting period. Primary endpoints focused on the acute and 1 year AF recurrence outcome.
Results: A total of 128 patients were included. Four patients were lost to follow-up. A total of 124 patients were included: 61 in the waiting period group and 63 in the no waiting period group. Mean age was 57.8 ± 13.5 years and 57.3% were male. Mean left ventricular ejection fraction was 60.6 ± 6.7%. There was no significant difference between groups regarding baseline characteristic, echocardiographic and procedure data. Acute PV recurrence occurred in 3 (2.4%) patients; 2 (3.3%) in the waiting period time group and 1 (1.6%) in the group without waiting period (p = 0.613). Adenosine testing after right- and left-sided PVI revealed dormant conduction in 4 patients (3.2%). During a mean follow-up time of 14.9 ± 5.5 months, 12.9% patients had recurrence of AF; 9.8% in the waiting period group and 15.9% in the no waiting period group. AF recurrence was similar between patients with and without waiting period (p = 0.489 of Log Rank test for equality of hazard function).

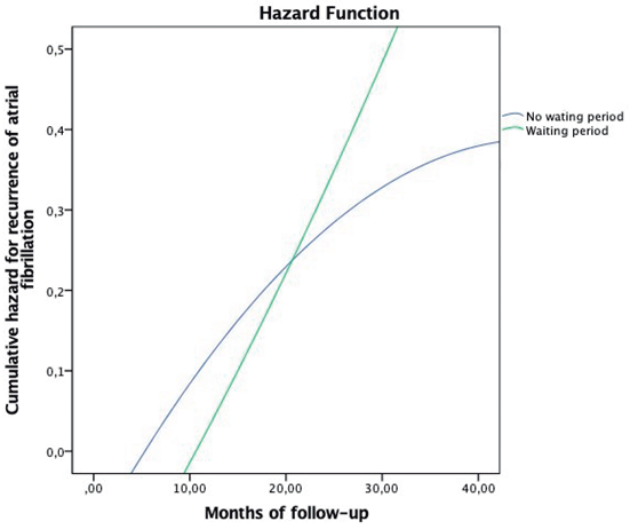

Figure 1. Quadratic splie for cumulative hazard of recurrence of atrial fibrillation

Conclusions: Paroxysmal AF patients submitted to PVI with the Ablation Index software do not require a waiting period time.

PO 55. LEFT ATRIAL STRAIN IMAGING EVALUATION: A STRONG PREDICTOR OF ATRIAL FIBRILLATION RECURRENCE AFTER SINGLE-PROCEDURE CATHETER ABLATION

Pedro Garcia Brás, Pedro Silva Cunha, Guilherme Portugal, Ana Galrinho, Pedro Rio, Bruno Valente, Madalena Coutinho Cruz, Ana Teresa Timóteo, Ana Sofia Delgado, Manuel Brás, Rui Cruz Ferreira, Luísa Moura Branco, Mário Oliveira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Identification of predictors of arrhythmia recurrence after catheter ablation of atrial fibrillation (AF) is a clinically relevant issue. Transthoracic echocardiography (TTE) is a readily accessible exam that can be useful in estimating left atrial (LA) mechanical function. The aim of this study was to evaluate LA structure and LA strain imaging at baseline and its association with AF recurrence after an index AF catheter ablation.
Methods: Analysis of patients with symptomatic paroxysmal and persistent AF who underwent a single-procedure for AF ablation between 2015 and 2019 and had performed TTE in our centre prior to AF ablation. LA parameters were assessed by 2D speckle-tracking at baseline. LA diameter index (LAVi), LA ejection fraction, LA phasic strain: reservoir (LASr), conduit (LAScd) and contraction phases (LASct), as well as integrated backscatter (IBS) values were analysed. AF recurrence was documented with 12-lead ECG, 24h Holter monitoring, external loop recorder or pacemaker analysis during a 12-month follow-up period.
Results: Of a total of 106 patients, 28 patients were excluded due to poor image quality. 78 patients who underwent pulmonary vein isolation (PVI) were studied (age 59 ± 14 years, 65% male, 40% with structural heart disease, 69% paroxysmal AF), with cryoballoon ablation in 53% and radiofrequency ablation in 47%. In a 12-month follow-up there was a 28% (22 patients) AF recurrence rate. Patients with AF recurrence had a baseline significantly superior LAVi (47 ± 17 mL/m^2 vs. 36 ± 12 mL/m^2, adjusted HR

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▼Este medicamento está sujeito a monitorização adicional. Nome: Xarelto 2,5 mg, 10 mg, 15 mg, 20 mg. Composição: Cada comprimido revestido por película contém 2,5 mg, 10 mg, 15 mg ou 20 mg de rivaroxabano. Forma Farmacêutica: Comprimido revestido por película. Indicações terapêuticas: **Xarelto 2,5** mg: Xarelto, coadministrado com ácido acetilsalicílico (AAS) isoladamente ou com AAS mais clopidogrel ou ticlopidina, é indicado para a prevenção de acontecimentos aterotrombóticos em doentes adultos após uma síndrome coronária aguda (SCA) com biomarcadores cardíacos elevados. Xarelto, coadministrado com ácido acetilsalicílico (AAS), é indicado para a prevenção de acontecimentos aterotrombóticos em doentes adultos com doença arterial coronária (DAC) ou doença arterial periférica (DAP) sintomática com alto risco de acontecimentos isquémicos. **Xarelto 10 mg**: Prevenção do tromboembolismo venoso (TEV) em doentes adultos submetidos a artroplastia eletiva da anca ou joelho. **Xarelto 15 mg e 20 mg:** Adultos: Prevenção do acidente vascular cerebral e do embolismo sistémico em doentes adultos com fibrilhação auricular não-valvular com um ou mais fatores de risco, tais como insuficiência cardíaca congestiva, hipertensão, idade ≥ 75 anos, diabetes mellitus, antecedentes de acidente vascular cerebral ou acidente isquémico transitório. População pediátrica: Tratamento do tromboembolismo venoso (TEV) e prevenção da recorrência de TEV em crianças e adolescentes com idade inferior a 18 anos e com um peso entre 30 kg e 50 kg após, pelo menos, 5 dias de tratamento anticoagulante parentérico inicial. **Xarelto 10 mg, 15 mg e 20 mg:** Tratamento da trombose venosa profunda (TVP) e embolismo pulmonar (EP) e prevenção da TVP recorrente e EP em adultos. Posologia e modo de administração: **Xarelto 2,5 mg: SCA:** A dose recomendada é de 2,5 mg duas vezes ao dia. Os doentes também devem tomar uma dose diária de 75 - 100 mg de AAS ou uma dose diária de 75 - 100 mg de AAS em adição quer a uma dose diária de 75 mg de clopidogrel quer a uma dose diária padrão de ticlopidina. A extensão do tratamento para além dos 12 meses deve ser feita individualmente em cada doente, uma vez que a experiência até aos 24 meses é limitada. DAC/DAP: Os doentes a tomar Xarelto 2,5 mg duas vezes por dia também devem tomar uma dose diária de 75 - 100 mg de AAS. A duração do tratamento deve ser determinada para cada doente individual com base em avaliações regulares e deve ter em consideração o risco de acontecimentos trombóticos face aos riscos de hemorragia. Em doentes com um acontecimento trombótico agudo ou procedimento vascular e, com necessidade de terapêutica antiplaquetária dupla, a continuação de Xarelto 2,5 mg duas vezes por dia deverá ser avaliada em função do tipo de acontecimento ou de procedimento e do regime antiplaquetário. A segurança e eficácia de Xarelto 2,5 mg duas vezes por dia, em associação com AAS mais clopidogrel/ticlopidina, foram estudadas apenas em doentes com SCA recente. A terapêutica antiplaquetária dupla não foi estudada em associação com Xarelto 2,5 mg duas vezes por dia em doentes com DAC/DAP. **Xarelto 10 mg:** Prevenção do TEV em doentes adultos submetidos a artroplastia eletiva da anca ou joelho: 10 mg de rivaroxabano, administrados, por via oral, uma vez ao dia. A posologia inicial deve ser administrada 6 a 10 horas após a cirurgia, desde que a hemostase tenha sido estabelecida. A duração do tratamento depende do risco individual do doente para tromboembolismo venoso, a qual é determinada pelo tipo de cirurgia ortopédica. Grande cirurgia da anca: tratamento de 5 semanas. Grande cirurgia do joelho: 2 semanas. Se for esquecida uma dose, o doente deverá tomar Xarelto imediatamente e depois continuar no dia seguinte com a toma uma vez ao dia, tal como anteriormente. **Xarelto 15 mg e 20 mg:** Prevenção do acidente vascular cerebral e do embolismo sistémico: A dose recomendada, que também é a dose máxima recomendada, é de 20 mg uma vez por dia. No caso de esquecimento de uma dose, o doente deve tomar imediatamente Xarelto e continuar no dia seguinte com a toma uma vez ao dia, conforme recomendado. Não deve ser tomada uma dose a dobrar no mesmo dia para compensar uma dose esquecida. **Xarelto 10 mg, 15 mg e 20 mg**: Tratamento da TVP, tratamento do EP e prevenção da TVP recorrente e EP em adultos: A dose recomendada para o tratamento inicial da TVP aguda ou EP é de 15 mg duas vezes por dia durante as primeiras três semanas, seguida de 20 mg uma vez por dia para continuação do tratamento e prevenção da TVP recorrente e EP. No caso de esquecimento de uma dose durante a fase de tratamento de 15 mg duas vezes por dia (dia 1 - 21), o doente deve tomar imediatamente Xarelto para assegurar a toma de 30 mg de Xarelto por dia. Neste caso podem tomar-se dois comprimidos de 15 mg ao mesmo tempo. O doente deve continuar no dia seguinte a toma diária e regular de 15 mg duas vezes por dia, conforme recomendado. No caso de esquecimento de uma dose durante a fase de tratamento de uma toma diária, o doente deve tomar imediatamente Xarelto e continuar no dia seguinte com a toma diária, conforme recomendado. Não deve ser tomada uma dose a dobrar no mesmo dia para compensar uma dose esquecida. **Xarelto 15 mg e 20 mg:**Tratamento do TEV e prevenção da recorrência de TEV em crianças e adolescentes:O tratamento com Xarelto em crianças e adolescentes com idade inferior a 18 anos deve ser iniciado após, pelo menos, 5 dias de tratamento anticoagulante parentérico inicial. A dose para crianças e adolescentes é calculada com base no peso corporal. Peso corporal entre 30 kg e 50 kg:recomenda-se uma dose de 15 mg de rivaroxabano uma vez por dia. Esta é a dose máxima diária.Peso corporal igual ou superior a 50 kg: recomenda-se uma dose de 20 mg de rivaroxabano uma vez por dia. Esta é a dose máxima diária. O peso da criança deve ser monitorizado e a dose deve ser revista regularmente. Isto é para assegurar que se mantém uma dose terapêutica. Os ajustes da dose devem ser apenas feitos com base nas alterações no peso corporal. O tratamento deve continuar durante, pelo menos, 3 meses em crianças e adolescentes. O tratamento pode ser prolongado até 12 meses quando clinicamente necessário. Não existem dados disponíveis em crianças para apoiar uma redução da dose após seis meses de tratamento. Deve avaliar-se o benefício-risco da terapêutica continuada após 3 meses numa base individual, tendo em conta o risco de trombose recorrente versus o potencial risco de hemorragia. Se houver esquecimento de uma dose, a dose esquecida deve ser tomada assim que possível uma vez detetada, mas apenas no mesmo dia. Se isto não for possível, o doente deve saltar a dose e continuar com a dose seguinte, conforme prescrito. O doente não deve tomar duas doses para compensar uma dose que se esqueceu de tomar. **Xarelto 15 mg e 20 mg:** Passagem de Antagonistas da Vitamina K (AVK) para Xarelto: Prevenção do acidente vascular cerebral e embolismo sistémico, o tratamento com AVK deve ser interrompido e a terapêutica com Xarelto deve ser iniciada quando o INR for ≤ 3,0. Tratamento da TVP, EP e na prevenção da recorrência em adultos e tratamento do TEV e prevenção da recorrência em doentes pediátricos: O tratamento com AVK deve ser interrompido e a terapêutica com Xarelto deve ser iniciada assim que o INR for ≤ 2,5. **Xarelto 10 mg,**: Em doentes tratados paraTVP, EP e na prevenção da recorrência, o tratamento com AVK deve ser interrompido e a terapêutica com Xarelto deve ser iniciada assim que o INR for ≤ 2,5. **Xarelto 2,5 mg, 10 mg, 15 mg e 20 mg**: Durante a passagem de doentes de AVK para Xarelto, os valores do INR poderão estar falsamente elevados após a toma de Xarelto. O INR não é uma medida válida para determinar a atividade anticoagulante de Xarelto, e portanto não deve ser utilizado. Passagem de Xarelto para os Antagonistas da Vitamina K (AVK): Em doentes que passam de Xarelto para um AVK, o AVK deve ser administrado simultaneamente até o INR ser ≥ 2,0. Durante os dois primeiros dias do período de passagem, deve utilizar-se a dose inicial padrão do AVK, seguida de uma dose do AVK com base nas determinações do INR. Enquanto os doentes estiverem a tomar simultaneamente Xarelto e o AVK, o INR não deve ser determinado antes das 24 horas após a dose precedente de Xarelto e antes da dose seguinte. **Xarelto 15 mg e 20 mg**: Doentes pediátricos:As crianças que passam de Xarelto para AVK têm de continuar com Xarelto durante 48 horas após a primeira dose de AVK. Após 2 dias de coadministração, deve efetuar-se a determinação do INR antes da dose seguinte de Xarelto programada. Aconselha-se que se continue com a coadministração de Xarelto e AVK até o INR ser ≥ 2,0. Assim que Xarelto for descontinuado, a determinação do INR poderá ser efetuada de forma fiável 24 horas após a última dose. Passagem de anticoagulantes parentéricos para Xarelto: Em doentes adultos e pediátricos (Xarelto 15 mg e 20 mg) atualmente a serem tratados com um anticoagulante parentérico, interromper o anticoagulante parentérico e iniciar Xarelto 0 a 2 horas antes da hora prevista para a administração seguinte do medicamento parentérico (ex.: HBPM) ou na altura da interrupção de um medicamento parentérico em administração contínua (ex.: heparina não fracionada intravenosa). Passagem de Xarelto para anticoagulantes parentéricos: **Xarelto 2,5 mg, 10 mg:** Administrar a primeira dose do anticoagulante parentérico na altura em que deve ser tomada a dose seguinte de Xarelto. **Xarelto 15 mg e 20 mg**: Descontinuar Xarelto e administrar a primeira dose do anticoagulante parentérico na altura em que deve ser tomada a dose seguinte de Xarelto Não é necessário ajuste posológico: compromisso renal ligeiro (adultos e população pediátrica),, população idosa, sexo, peso corporal (adultos). Não é recomendada a utilização em doentes com taxa de depuração da creatinina < 15 ml/min. **Xarelto 2,5 mg e 10 mg**: Os comprimidos podem ser tomados com ou sem alimentos. **Xarelto 15 mg e 20 mg**: Os comprimidos devem ser tomados com alimentos. **Xarelto 2,5 mg**: População pediátrica: não é recomendada a sua utilização em crianças com idade inferior a 18 anos. **Xarelto 10 mg**: Não é recomendado na indicação prevenção de TEV em crianças com idade inferior a 18 anos. **Xarelto 2,5 mg, 10 mg, 15 mg e 20 mg**:Em doentes incapazes de engolir comprimidos inteiros, o comprimido Xarelto pode ser esmagado e misturado com água ou puré de maçã imediatamente antes da utilização e administrado por via oral. O comprimido Xarelto esmagado pode também ser administrado através de sondas gástricas.. **Xarelto 15 mg e 20 mg**Crianças e adolescentes com peso entre 30 kg e 50 kg: O doente deve ser aconselhado a engolir o comprimido com um líquido. O comprimido deve também ser tomado com alimentos . Os comprimidos devem ser tomados com um intervalo de, aproximadamente, 24 horas. Deverá administrar-se uma nova dose no caso de o doente cuspir ou vomitar a dose imediatamente no período de 30 minutos após ter recebido a dose. Contudo, se o doente vomitar decorridos mais de 30 minutos após a dose, a dose não deverá ser readministrada e a dose seguinte deverá ser tomada conforme programado.O comprimido não pode ser dividido numa tentativa de se obter uma fração de uma dose do comprimido.Nos doentes que não são capazes de engolir os comprimidos inteiros, deverá utilizar-se Xarelto granulado para suspensão oral.Se a suspensão oral não estiver imediatamente disponível quando se prescrevem doses de 15 mg ou 20 mg de rivaroxabano, estas podem ser obtidas esmagando-se o comprimido de 15 mg ou 20 mg e misturando-o com água ou com puré de maçã imediatamente antes de utilizar e administrar por via oral. O comprimido esmagado poderá ser administrado através de uma sonda nasogástrica ou de uma sonda de alimentação gástrica.. Cardioversão: Xarelto pode ser iniciado ou continuado em doentes que possam necessitar de cardioversão. Contraindicações: **Xarelto 2,5 mg, 10 mg, 15 mg e 20 mg**: Hipersensibilidade à substância ativa ou a qualquer um dos excipientes. Hemorragia ativa clinicamente significativa. Gravidez e amamentação. Doença hepática associada a coagulopatia e risco de hemorragia clinicamente relevante incluindo doentes com cirrose com Child Pugh B e C. Lesões ou condições se consideradas como apresentando um risco significativo de grande hemorragia. Estas podem incluir úlceras gastrointestinais atuais ou recentes, presença de neoplasias malignas com elevado risco de hemorragia, lesão recente no cérebro ou na espinal medula, cirurgia cerebral, espinal ou oftálmica recente, hemorragia intracraniana recente, suspeita ou conhecimento de varizes esofágicas, malformações arteriovenosas, aneurismas vasculares ou grandes anomalias vasculares intraespinais ou intracerebrais. O tratamento concomitante com quaisquer outros agentes anticoagulantes, ex.: heparina não fracionada (HNF), heparinas de baixo peso molecular (enoxaparina, dalteparina, etc.), derivados da heparina (fondaparinux, etc.), anticoagulantes orais (varfarina, dabigatrano etexilato, apixabano,etc.), exceto nas circunstâncias específicas de mudança de terapêutica anticoagulante ou quando são administradas doses de HNF necessárias para manter aberto um acesso venoso central ou um cateter arterial. **Xarelto 2,5 mg**: O tratamento concomitante da SCA com terapêutica antiplaquetária em doentes com acidente vascular cerebral ou acidente isquémico transitório (AIT) anterior. Tratamento concomitante da DAC/DAP com AAS em doentes com acidente vascular hemorrágico ou lacunar prévio, ou com qualquer acidente vascular no período de um mês. Advertências e precauções especiais de utilização: **Xarelto 2,5 mg, 10 mg, 15 mg e 20 mg:** Risco hemorrágico; Compromisso renal; Os doentes com problemas hereditários raros de intolerância à galactose, deficiência total de lactase ou malabsorção de glucose-galactose não devem tomar este medicamento. Punção ou anestesia espinal/epidural; Doentes com válvulas protésicas; Doentes com síndrome antifosfolipídica. Procedimentos invasivos e intervenções cirúrgicas. Reações dermatológicas. **Xarelto 2,5 mg:** Doentes com SCA com antecedentes de acidente vascular cerebral ou AIT. Doentes com DAC/DAP (Os doentes com DAC/DAP com acidente vascular hemorrágico ou lacunar prévio, ou com um acidente vascular isquémico, não lacunar, no mês precedente não foram estudados). **Xarelto 10 mg**: Cirurgia por fratura da anca; **Xarelto 10 mg, 15 mg e 20 mg**: Doentes com EP hemodinamicamente instáveis ou doentes que necessitam de trombólise ou embolectomia pulmonar; **Xarelto 15 mg e 20 mg**: Doentes com fibrilhação auricular não-valvular submetidos a ICP com colocação de stent (Não há dados disponíveis para estes doentes com antecedentes de acidente vascular cerebral/ ataque isquémico transitório (AIT)). Interações medicamentosas: Inibidores do CYP3A4 e da gp-P; Anticoagulantes; AINEs/ inibidores da agregação plaquetária; ISRS/IRSN; Varfarina; Indutores do CYP3A4 Os parâmetros de coagulação (ex.: TP, aPTT, HepTest) são afetados. Efeitos indesejáveis: Anemia (incl. parâmetros laboratoriais respetivos), tonturas, cefaleias, hemorragia ocular (incl. hemorragia conjuntival), hipotensão, hematoma, epistaxe, hemoptise, hemorragia gengival, hemorragia do trato gastrointestinal (incl. hemorragia retal), dores gastrointestinais e abdominais, dispepsia, náuseas, obstipação, diarreia, vómitos, aumento das transaminases, prurido (incl. casos raros de prurido generalizado), exantema cutâneo, equimose, hemorragia cutânea e subcutânea, dor nas extremidades, hemorragia do trato urogenital (incluindo hematúria e menorragia), compromisso renal (incl.aumento da creatinina no sangue, aumento de ureia no sangue), febre, edema periférico, diminuição da força e energia de um modo geral (incl. fadiga, astenia), hemorragia pós-procedimento (incluindo anemia pós-operatória e hemorragia da ferida), contusão, secreção da ferida, trombocitose (incl. aumento da contagem de plaquetas), trombocitopenia, reação alérgica, dermatite alérgica, angioedema e edema alérgico, hemorragia cerebral e intracraniana, síncope, taquicardia, xerostomia, compromisso hepático, aumento da bilirrubina, aumento da fosfatase alcalina sérica, aumento da GGT, urticária, hemartrose, sensação de mal-estar, aumento da HDL, aumento da lipase, aumento da amilase, icterícia, bilirrubina conjugada aumentada (com ou sem aumento concomitante da ALT), colestase, hepatite (inc. lesão hepatocelular), hemorragia muscular, edema localizado, pseudoaneurisma vascular, reacões anafiláticas, incluindo choque anafilático, síndrome de Stevens-Johnson, necrólise epidérmica tóxica, síndrome de DRESS, síndrome compartimental a hemorragia; insuficiência renal/insuficiência renal aguda secundária a hemorragia suficiente para causar hipoperfusão. Número da A.I.M.: 5565858, 5565866, 5565874, 5132956, 5132964, 5132972, 5423918, 5423926, 5423934, 5424379, 5424403. Data de revisão do texto: 01/2021.

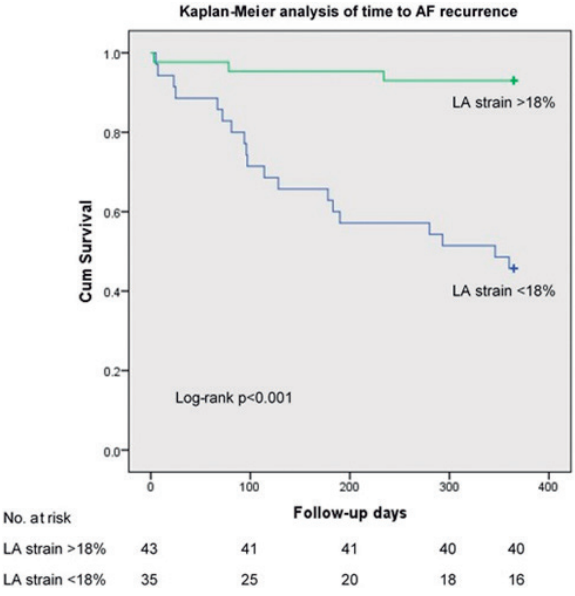
MSRM. Regime de comparticipação: Xarelto 10mg, 15mg e 20mg (Comparticipado no Regime Geral 69%; Regime Especial 84%), Xarelto 2,5mg (não Comparticipado).Bayer Portugal, LDA., Rua Quinta do Pinheiro, nº 5, 2794-003 Carnaxide - NIF 500 043 256. Para mais informações deverá contactar o titular da autorização de introdução no mercado. Notifique acontecimentos adversos a: INFARMED (farmacovigilancia@infarmed.pt), Bayer Portugal (medical@bayer.com)

Nome: Aspirina GR. Composição: 100 mg de ácido acetilsalicílico. Forma Farmacêutica: comprimidos gastrorresistentes. Indicações: Inibição da agregação plaquetária: na angina de peito instável, no enfarte do miocárdio agudo, na profilaxia do reenfarte, após cirurgia vascular ou intervenções cirúrgicas (p.ex. PTCA, CAGB), na prevenção de acidentes isquémicos transitórios (AIT) e trombose cerebral após manifestação de estádios precursores, na prevenção de tromboses dos vasos sanguíneos coronários em doentes com factores de risco múltiplos, na prevenção de trombose venosa e embolia pulmonar e na profilaxia prolongada da enxaqueca. **Posologia:** na angina de peito instável, na profilaxia do reenfarte, após cirurgia vascular ou intervenções cirúrgicas - 100-300 mg/dia, no enfarte do miocárdio agudo - 100-160 mg/dia, na prevenção de acidentes isquémicos transitórios e trombose cerebral após manifestação dos estádios precursores - 30 - 300 mg/dia, para a prevenção de trombose dos vasos coronários em doentes com factores de risco múltiplos -100-200 mg/dia ou de 300 mg em dias alternados, para a prevenção de trombose venosa e embolia pulmonar - 100-200 mg e para profilaxia da enxaqueca -100-200 mg/dia ou de 300 mg em dias alternados. **Modo de administração:** Os comprimidos são ingeridos com líquido, de preferência após ingestão de alimentos. **Contraindicações:** hipersensibilidade conhecida à substância ativa ácido acetilsalicílico, a outros salicilatos ou a qualquer um dos excipientes, história de asma induzida por salicilatos ou anti-inflamatórios não esteroides, úlceras gastrointestinais agudas, diátese hemorrágica, insuficiência renal, hepáticas e cardíaca graves e terceiro trimestre da gravidez. **Precauções especiais:** Hipersensibilidade a analgésicos/anti-inflamatórios/antirreumatismais ou a outras substâncias alergénicas; história de úlceras gastrointestinais incluindo doença ulcerosa crónica ou recorrente ou história de hemorragias gastrointestinais; administração concomitante de anticoagulantes, em doentes que tem deficiência grave em glucose-6-fosfato dehidrogenase (G6PD), não deve ser utilizada em crianças e adolescentes nas infeções virais, com ou sem febre, sem consultar previamente um médico. Em certas doenças virais, especialmente em síndromes gripais e varicela, há um risco de ocorrência de síndrome de Reye, uma doença muito rara mas que coloca a vida em risco, necessitando de intervenção médica imediata. **Efeitos indesejáveis:** náuseas, dispepsia, vómitos, hematemeses, flatulência, dor abdominal, diarreia, obstipação, melenas, estomatite aftosa, exacerbação de colite ou doença de Crohn, casos raros de erupções cutâneas, alterações da função hepática (aumento das transaminases) e da função renal, hipoglicemia, tonturas e zumbidos, foram notificados casos de hemólise e anemia hemolítica em doentes com formas graves de deficiência em glucose-6-fosfato dehidrogenase. Foram notificados casos de insuficiência renal e falha renal aguda. Titular da AIM: Bayer Portugal, Lda. Registo nº 3045580.. Data da revisão do texto: 01/2020. Para mais informações deverá contactar o titular da autorização de introdução no mercado. Medicamento sujeito a receita médica. Não comparticipado.

Bayer Portugal, LDA., Rua Quinta do Pinheiro, no 5, 2794-003 Carnaxide - NIF 500 043 256. Para mais informacoes devera contactar o titular da autorizacao de introducao no mercado. Notifique acontecimentos adversos a: INFARMED (farmacovigilancia@infarmed.pt), Bayer Portugal (medical@bayer.com)

Referência: 1. Xarelto® (rivaroxaban). Resumo de Características do Medicamento. Aspirin®.Resumo de Características do Medicamento. **2.** Eikelboom J.W., Connolly S.J., Bosch J. et al. Rivaroxaban with or without aspirin in stable cardiovascular disease. N Engl J Med. 2017;377(14):1319–30. **3.** Knuuti, Juhani, et al. "2019 ESC Guidelines for the diagnosis and management of chronic coronary syndromes: the Task Force for the diagnosis and management of chronic coronary syndromes of the European Society of Cardiology (ESC)." European heart journal 41.3 (2020): 407-477. **4.** Cosentino, Francesco, et al. "2019 ESC Guidelines on diabetes, pre-diabetes, and cardiovascular diseases developed in collaboration with the EASD: The Task Force for diabetes, pre-diabetes, and cardiovascular diseases of the European Society of Cardiology (ESC) and the European Association for the Study of Diabetes (EASD)." European heart journal 41.2 (2020): 255-323. **5.** Frank, Ulrich, et al. "ESVM Guideline on peripheral arterial disease." Vasa (2019).

1.04 [95%CI 1.01-1.06], p = 0.002) and lower estimated LA ejection fraction (25 ± 19.7% vs. 45.4 ± 21.0%, adjusted HR 0.96 [95%CI 0.94-0.98], p = 0.001). Multivariate analysis showed that baseline LA strain parameters were independent predictors of AF recurrence, as patients with AF recurrence showed impaired LASr (9.81 ± 5.79% vs. 22.94 ± 9.98%, adjusted HR 0.81 [95%CI 0.73-0.89], p < 0.001) and LAScd (-6.74 ± 4.11% vs. -11.85 ± 7.00%, adjusted HR 1.11 [95%CI 1.03-1.19], p = 0.004). In patients in sinus rhythm during baseline TTE, LASct also correlated with AF recurrence, as patients with recurrence also showed impaired baseline LASct (-7.49 ± 3.65% vs. -13.74 ± 5.40%, adjusted HR 1.39 [95%CI 1.11-1.75], p = 0.005). LASr < 18% showed a sensitivity of 86% and specificity of 70% to predict AF recurrence. Kaplan-Meier curves (Figure) showed that patients with LASr below the 18% cut-off had a significantly higher rate of AF recurrence. Baseline IBS did not reveal significant differences in AF recurrence (111.2 ± 23.9 dB vs. 105.9 ± 33.5 dB, HR 1.007 [0.993-1.002], p = 0.349).



Conclusions: Baseline LA strain imaging parameters, including reservoir phase LA strain, were demonstrated to be independent predictors of AF recurrence after PVI. A LASr < 18% showed good accuracy to predict AF recurrence.

PO 56. BASELINE LEFT ATRIAL STRAIN IMAGING ASSESSMENT PREDICTS ARRHYTHMIA RECURRENCE IN PATIENTS WITH PAROXYSMAL OR PERSISTENT ATRIAL FIBRILLATION UNDERGOING CATHETER ABLATION

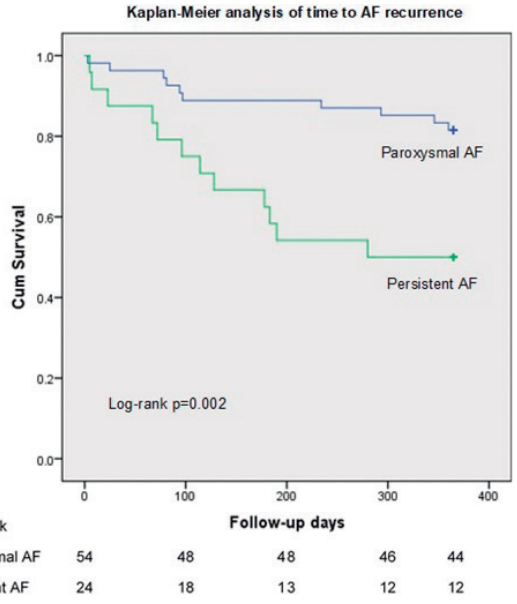
Pedro Garcia Brás, Pedro Silva Cunha, Ana Galrinho, Guilherme Portugal, Bruno Valente, Pedro Rio, Ana Teresa Timóteo, Madalena Coutinho Cruz, Margarida Paulo, Ana Sofia Delgado, Rui Cruz Ferreira, Mário Oliveira, Luísa Moura Branco

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Left atrial (LA) strain imaging by echocardiography (TTE) is a promising tool in the evaluation of LA mechanical function. The aim of this study was to compare LA structure and strain imaging between paroxysmal (PAF) and persistent AF (PersAF) and evaluate rates of AF recurrence post-index catheter ablation.

Methods: Analysis of consecutive patients with symptomatic PAF and PersAF who underwent a first AF catheter ablation with at least 12-month follow-up and had performed TTE in our centre prior to the procedure. LA strain parameters were assessed by 2D speckle-tracking at baseline. LA diameter index (LAVi), LA phasic strain: reservoir (LASr), conduit (LAScd) and contraction phases (LASct) and respective phases' strain rate (SR), as well as integrated backscatter (IBS) were analysed. AF recurrence was documented with 12-lead ECG, 24h Holter monitoring, external loop recorder or pacemaker analysis in a 12-month follow-up period.

Results: 78 patients (31% PersAF vs. 69% PAF) who underwent pulmonary vein isolation (PVI) were studied (cryoballoon ablation [CBA] in 53% and radiofrequency ablation in 47%). There was no significant difference between groups (PersAF and PAF) regarding mean age (60 ± 10 vs. 59 ± 12 years, p = 0.664), gender (male 67% vs. 65%, p = 0.543), structural heart disease (50% vs. 33%, p = 0.132) or PVI modality (CBA 46% vs. 55%, p = 0.469). Patients with PersAF had a significantly higher LAVi (46 ± 15 mL/m^2 vs. 36 ± 13 mL/m^2 p = 0.004), reduced LA ejection fraction (19 ± 15% vs. 49 ± 19%, p < 0.001) and impaired LASr (9.2 ± 4.9% vs. 23.9 ± 9.3%, p < 0.001), as well as reservoir SR (0.58 ± 0.25 s^{-1} vs. 1.08 ± 0.40 s^{-1}, p < 0.001). There was no significant difference between groups regarding the conduit phase strain: LAScd (-9.0 ± 4.9% vs. -11.3 ± 7.3%, p = 0.108), conduit SR (-0.92 ± 0.61 s^{-1} vs. -0.94 ± 0.39 s^{-1}, p = 0.894) or IBS (116.6 ± 36.1 dB vs. 106.6 ± 21.5 dB, p = 0.134). Patients with PAF in sinus rhythm during TTE showed a LASct of 12.5 ± 5.6% and contractile SR of -1.37 ± 0.6 s^{-1}. The AF burden at 3-month post-PVI external loop recorder was 0% in 50% PersAF patients vs. 79% PAF; 1-99% in 35% vs. 21% and 99-100% in 15% vs. 0%, p = 0.008. During follow-up there was a 28% (22 patients) AF recurrence rate (PersAF 50% vs. PAF 20%, adjusted HR 3.44 [95%CI 1.44-7.69], p = 0.005). (Figure, Kaplan Meier analysis). In patients with AF recurrence, PersAF showed a significantly inferior baseline LASr (6.44 ± 3.25 vs. 13.85 ± 5.65, p = 0.003). Reduced baseline LASr was a significant predictor of AF recurrence both in PAF (adjusted HR 1.29 [95%CI 1.13-1.48], p < 0.001) and PersAF (adjusted HR 1.22 [95%CI 1.02-1.47], p = 0.028).



Conclusions: Patients with PersAF showed increased LA volume, reduced LA ejection fraction and reservoir phase strain parameters at baseline, as well as superior AF burden and 12-month recurrence rate after PVI vs. PAF. Reduced baseline LASr was a significant predictor of AF recurrence both in PAF and PersAF.

PO 57. SELECTIVE SEROTONIN REUPTAKE INHIBITORS FOR DEBILITATING VASOVAGAL SYNCOPE: LOOKING FOR COPPER AND FINDING GOLD

José Pedro Sousa[1], Luís Puga[1], João Gameiro Lopes[1], Ana Rita Gomes[2], Carolina Saleiro[1], Diana de Campos[2], Carolina Lourenço[1], Lino Gonçalves[3]

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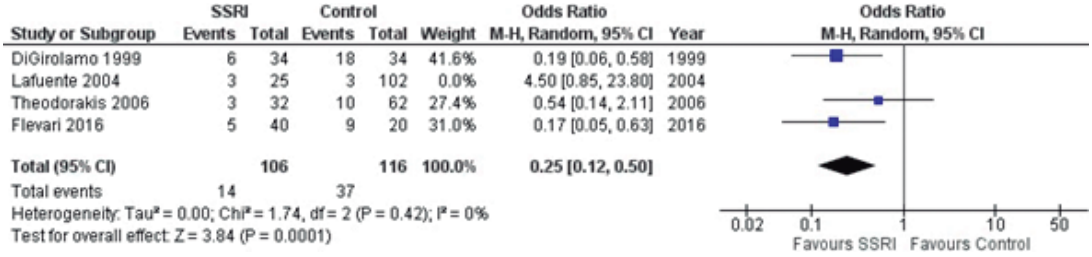
Introduction: Despite its benign course, recurrent vasovagal syncope (VVS) may be disabling. Even though a non-pharmacological approach is generally first-line, drugs might also be of use. In this respect, the value of selective serotonin reuptake inhibitors (SSRIs) is still a matter of debate.



PO 57 Figure

Objectives: To perform a meta-analysis aimed at evaluating the extent to which SSRIs might reduce VVS recurrences in susceptible patients.
Methods: We systematically searched MEDLINE, Embase, Web of Science, Cochrane Library and Google Scholar for prospective studies addressing the effect of SSRIs on the recurrence rate of VVS in predisposed patients, published up until December 31st, 2020. In order to be included in the quantitative analysis, studies were required to encompass a positive head-up tilt table (HUTT) test for VVS diagnosis and a minimum patient follow-up of 6 months. The primary endpoint was recurrent spontaneous VVS, whereas secondary endpoints included the efficacy outcome of HUTT test-induced VVS and the safety outcome of drug discontinuation for adverse effects. Randomized controlled trials (RCTs) and studies including the most represented SSRI drug were further investigated separately, with respect to the primary endpoint. Study-specific odds ratios (ORs) were pooled using traditional meta-analytic techniques, under a random-effects model.
Results: 3 RCTs (2 placebo-controlled and 1 both placebo- and active-controlled) and 1 non-randomized prospective study, encompassing 222 and 127 patients, respectively, were deemed eligible for quantitative evaluation. Patient follow-up ranged between 6 and 24 months. 131 patients were allocated to the SSRI arm, which featured fluoxetine as the most represented element (97 cases). The absolute number of events for each outcome may be reported as follows: primary efficacy endpoint, 57; secondary efficacy endpoint, 68 (only 2 RCTs reporting); secondary safety endpoint, 4 (only 2 RCTs reporting). In the main analysis, SSRIs were not found to significantly reduce VVS recurrence rate (OR 0.48, 95%CI 0.13-1.81, P 0.28, i^2 74%). This null result was, however, single-handedly driven by the only non-randomized study included (OR 4.5, 95%CI 0.85-23.8). Likewise, fluoxetine was not able to significantly reduce the primary efficacy endpoint (OR 0.7, 95%CI 0.12-4.12, p 0.7, i^2 78%), while SSRIs only numerically cut HUTT test-induced VVS events (OR 0.66, 95%CI 0.24-1.84, p 0.43, i^2 59%). Nevertheless, when only RCTs are considered, SSRIs exerted a meaningful reduction in VVS recurrence rate, with no heterogeneity (OR 0.25, 95%CI 0.12-0.5, p 0.0001, i^2 0%). In addition, drug discontinuation for safety reasons was rare and comparable between the SSRI and the placebo arms (OR 1.51, 95%CI 0.21-10.74, p 0.59, i^2 0%).
Conclusions: SSRIs represent one more safe pharmacological option to reduce syncope recurrences in patients with otherwise refractory VVS.

PO 58. MYOCARDIAL INJURY AFTER PULMONARY VEIN ISOLATION: FIRE VERSUS ICE

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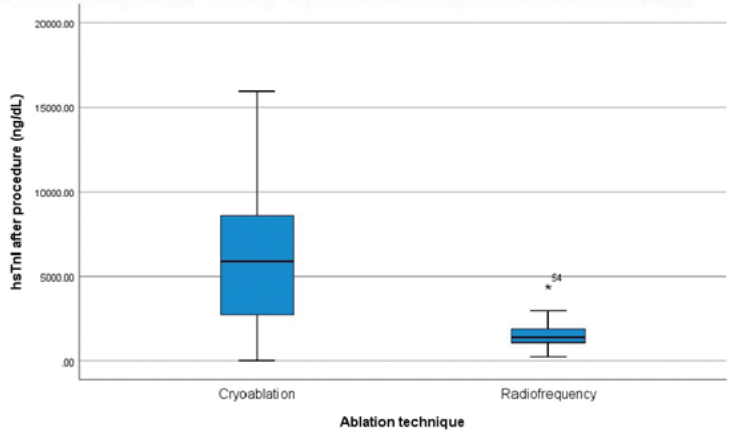
Introduction: The cornerstone of atrial fibrillation (AF) catheter ablation is pulmonary vein isolation (PVI), either using point-by-point radiofrequency

Table 1. Baseline characteristics: cryoablation versus radiofrequency ablation

	Cryoablation (n=30)	Radiofrequency (n=30)	p value
Age (years) - mean±SD	56.0 (12.7)	59.7 (11.7)	0.200
Gender (males) - n (%)	22 (73)	15 (50)	0.063
Hypertension - n (%)	16 (53)	20 (67)	0.292
Diabetes mellitus - n (%)	4 (13)	2 (7)	0.389
Dyslipidaemia - n (%)	17 (57)	14 (47)	0.438
Obesity* - n (%)	17 (57)	22 (73)	0.872
Tabagism* - n (%)	11 (37)	4 (13)	0.011
Thyroid disease* - n (%)	3 (10)	12 (40)	0.009
Parosxymal /Permanent AF - n (%) / n (%)	21 (70) / 9 (30)	25 (83) / 5 (17)	0.222
ECV during ablation - n (%)	8 (27)	9 (30)	0.774

Footnote: AF - atrial fibrillation. ECV - electrical cardioversion. hsTnI - high-sensitivity troponin I. SD - standard deviation. *2 missing values for obesity; 5 missing values for tabagism; 1 missing value for thyroid disease.

Figure 1. Postablation high-sensitivity Troponin I elevation: cryoballoon versus radiofrequency



PO 58 Figure

ablation (RF) or single-shot ablation devices, such as cryoballoon ablation (CB). However, achieving permanent transmural lesions is difficult and PV reconnection is common. Elevation of high-sensitivity Troponin I (hsTnI) may be used as a surrogate marker for transmural lesions. Still, data regarding the comparison of hsTnI increase after PVI with RF or cryo-energy is controversial. The aim of this study is to compare the magnitude of hsTnI elevation after PVI with CB versus RF using ablation index guidance.
Methods: Prospective study of 60 patients admitted for first ablation procedure of paroxysmal or persistent AF in a single tertiary Cardiology Department. Thirty patients were submitted to PVI using CB and 30 patients were submitted to RF, using CARTO® mapping system and ablation index guidance. Patients with atrial flutter were excluded. Baseline characteristics were compared between groups, as well as hsTnI before and after the procedure.
Results: Mean age was 57.9 ± 12.3 years old, 62% of patients were male and 77% had paroxysmal AF. There were no significant differences between groups regarding gender, age, prevalence of hypertension, dyslipidaemia, diabetes, obesity or AF type. There was also no significant difference in electrical cardioversion need during the procedure. HsTnI median value before ablation was 1.90 ± 1.98 ng/dL. Postprocedural hsTnI was significantly higher in CB-group (6,562.7 ± 4,756.2 ng/dL versus 1,564.3 ± 830.7 ng/dL in RF-group; p = 0.001). Regarding periprocedural complications, there was only one case of mild pericardial effusion in RF-group associated with postablation hsTnI of 1,180.0 ng/dL.
Conclusions: High-sensitivity Troponin I was significantly elevated after PVI, irrespective of the ablation technique. In CB-group, hsTnI elevation was significantly higher than in RF-group. This disparity may reflect more extensive lesions with cryoablation, without compromising safety. Long-term studies are needed to understand whether this hsTnI elevation is predictive of a lower AF recurrence rate.

PO 59. RADIOFREQUENCY CATHETER ABLATION OF FOCAL ATRIAL TACHYCARDIA: CHARACTERISTICS AND RESULTS OF A SERIES IN A TERTIARY HOSPITAL

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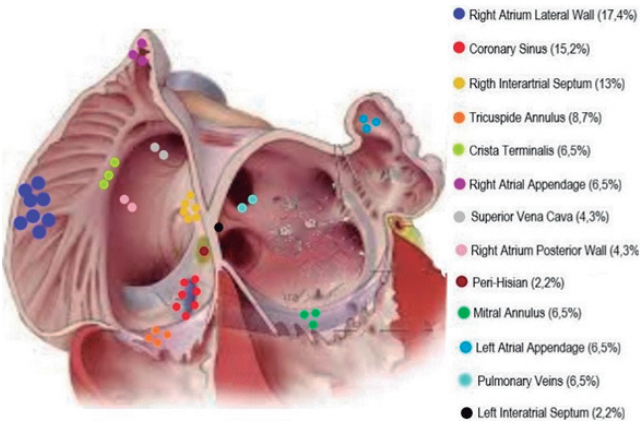
Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Focal atrial tachycardia (AT) is a relatively uncommon arrhythmia with poor response to medical treatment. Radiofrequency (RF) ablation appears to be a good option for treatment of symptomatic patients (P).
Objectives: To describe the clinical characteristics, electrophysiological (EP) findings, safety and short-term efficacy of catheter ablation in P with AT.
Methods: Retrospective analysis of consecutive P submitted to AT ablation using electroanatomical mapping between 2015 and 2020. If the AT was not present spontaneously, pacing maneuvers (atrial drive or burst pacing with up to 3 extra-stimuli) and isoprenaline was employed until reproducible induction of an ectopic atrial rhythm. Radiofrequency (RF) ablation was delivered at the site of earliest activation after validation of local electrograms until non-inducibility.
Results: A total of 46P (61% female) were included, with a mean age of 48 ± 23 years (minimum 8 months, maximum 86 years). Idiopathic AT was observed in 47.8%, while 52.2% had other relevant comorbidities (chronic pulmonary disease 17.4%; previous cardiac surgery 8.7%; congenital heart disease 10.9%; coronary artery disease 6.5%). Despite anti-arrhythmic therapy, daily palpitations were present in 87% of the cases and dizziness or syncope occurred in 22%). Nearly half (47.8%) had previously sought urgent medical care and 30.4% had a hospital admission due to arrhythmia. The clinical arrhythmia was documented in 34P (47.8% by 12-lead electrocardiography and 26.1% in 24h Holter monitoring). During the electrophysiology study a focal AT was documented in all P (spontaneously in 54.3% and induced with pacing maneuvers in 45.7%). AT origin after electroanatomical activation mapping is depicted in the figure. After focal RF ablation, a second AT was induced in 16P (34.8%) and a new ablation was performed in 15 cases (93.8%). Total RF time was 508 ± 386 sec. One P developed right phrenic nerve palsy after ablation on the lateral wall of the right atrium. No other complications were noted. On follow-up (mean 320 ± 92 days), symptoms improved in 88.1% of the P, with a 3-fold decrease in urgent medical care visits and hospital admission for arrhythmia. Three P (8.7%) were submitted to a new EP study, in which an AT was documented and ablated in 2P.



Conclusions: AT is a very symptomatic arrhythmia, associated with increased usage of hospital resources and poor response to antiarrhythmic therapy. Ablation is an efficient treatment option, with a high success rate, low rate of complications and short-term clinical benefits.

PO 60. SHORT-TERM ATRIAL TACHYCARDIA RECURRENCE AND CLINICAL IMPROVEMENT AFTER CATHETER ABLATION: ARE THERE WORST RESULTS IN STRUCTURAL HEART DISEASE?

Alexandra Castelo, Guilherme Portugal, Bárbara Teixeira, Pedro Garcia Brás, Vera Vaz Ferreira, José Viegas, Bruno Valente, Pedro Silva Cunha, Manuel Brás, Ana Delgado, Rui Cruz Ferreira, Mário Martins Oliveira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Focal atrial tachycardia (AT) is a relatively uncommon arrhythmia, often requiring treatment with radiofrequency (RF) catheter ablation. However, ablation tends to be less often considered in patients (P) with structural heart disease.
Objectives: To compare short-term recurrence rates and clinical improvement after AT ablation in P with different underlying cardiac substrates.
Methods: Retrospective analysis of consecutive P who were submitted to AT ablation between 2015 and 2020. Electroanatomical mapping was employed in all cases. RF was delivered at the site of earliest activation after validation of local electrograms until non-inducibility was obtained. During follow-up, AT recurrence was documented by 12-lead electrocardiograms (EKG) or 24h Holter monitoring.
Results: A total of 46P were included (48 ± 23years - minimum 8 months, maximum 86 years -, female 60.9%). Idiopathic AT was observed in 47.8%, while 52.2% of the P had associated comorbidities (pulmonary disease 17.4%; previous cardiac surgery [PCS] 8.7%; congenital heart disease [CHD] 10.9%; coronary artery disease 6.5%). Palpitations were the most frequent symptom (87%), followed by dizziness or syncope (21.7%). Nearly half of the P (47.8%) had previously sought urgent medical care and 30.4% had hospital admissions due to arrhythmia. During the electrophysiologic study, a focal AT was observed in all P, and a focal RF ablation was done with success. There were no major complications related with the procedure. On the follow-up period (mean 320 ± 92 days) after AT ablation, there was a 3-fold decrease in urgent medical care visits and in hospital admissions for arrhythmia. AT (70% sustained and 30% self-limited) was documented in 10P (21.7%, by EKG in 7P and Holter in 3P) and symptoms improved in 88.1% of the cases. There was no difference on AT recurrence according to age (p = 0.658), gender

(p = 0.426), idiopathic AT (p = 0.575), PCS (p = 0.152), CHD (p = 0.294), pulmonary disease (p = 0.486) or coronary revascularization (p = 0.615). P with a PCS or CHD tended to have less symptoms improvement after ablation (p = 0.022 and p = 0.058, respectively).
Conclusions: RF ablation for AT is a safe and effective treatment option, with good short-term outcomes. Success rates are high, even in P with structural heart disease, although P with CHD or PCS tend to have less symptomatic improvement.

PO 61. REAL-WORLD COMPARISON OF DIFFERENT PERIPROCEDURAL ANTITHROMBOTIC STRATEGIES FOR ATRIAL FIBRILLATION CATHETER ABLATION

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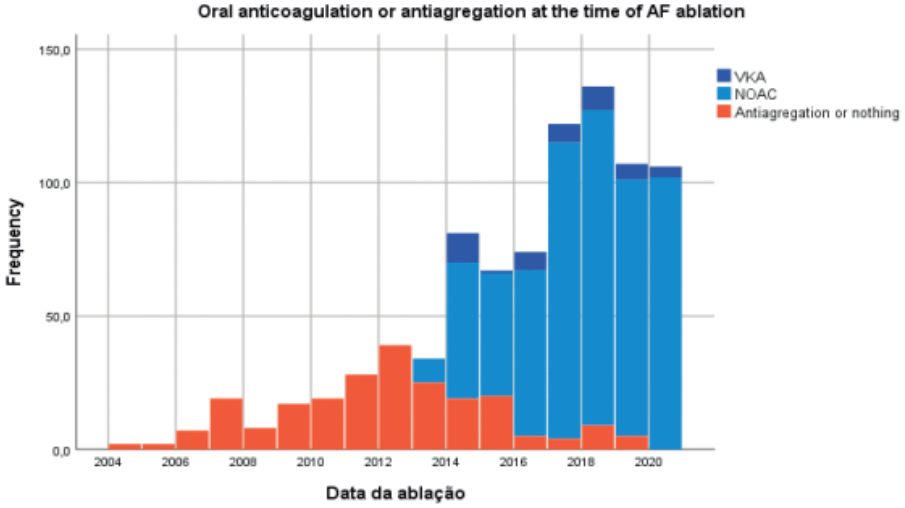
Introduction: Atrial Fibrillation (AF) catheter ablation carries high bleeding and thromboembolic risks, requiring a detailed assessment of the overall risk-benefit profile regarding antithrombotic strategy. Vitamin K Anticoagulant (VKA) and Non-Vitamin K Antagonist Oral Anticoagulant (NOAC) have been used in the latest years in this setting, and with different interruption protocols periprocedural. Our goal was to evaluate the rate of acute adverse events (AAE) and compare them according to the antithrombotic strategy used periprocedural, on a real-world basis.

Methods: A single-center retrospective study, including adult patients admitted to first AF catheter ablation, from 2004 to 2020. Different antithrombotic strategies (anticoagulation with VKA uninterrupted, anticoagulation with NOAC uninterrupted, no therapy or antiaggregation/ interrupted ACO) were compared concerning the rate of any clinically relevant AAE; the composite of major AAE (hemopericardium and stroke/ transient ischemic attack [TIA]) and minor AAE associated with vascular access. Descriptive statistics and logistic regression were used to compare groups according to the antithrombotic strategy with an alpha level of 0.05.
Results: Among the 868 patients included (mean age 59 ± 12 yo, 67.5% [n = 586] men), pulmonary vein isolation was performed under uninterrupted anticoagulation in 640 (73.7%), of which 595 patients with NOAC (68.5%) and 45 with VKA (5.2%). AF was paroxysmal, persistent and long-standing persistent in 63.4% (n = 550), 21.4%(n = 185) and 15.4%(n = 133) patients, respectively. Mean CHADS-VASc score was 1.86 ± 1.48. Over time there was a shift in the distribution of the type of antithrombotic therapy used, consistent with changes in recommendations (Figure). The composite outcome occurred in 6.8% (n = 62), including hemopericardium in 1.8% (n = 16), stroke/TIA in 0.7% (n = 6) and events related to vascular access in 1.4% (n = 13) [Table 1]. No anticoagulation therapy or antiaggregation/interrupted ACO was more associated with the outcome, driven by major AAE, although the difference did not meet statistical significance (p = 0.06) [Table 1]. No difference was found between VKA and NOAC group. Additionally, there was no difference in the incidence of hemorrhagic AAE since the implementation of an uninterrupted anticoagulation strategy periprocedural.
Conclusions: In our population of patients submitted to AF catheter ablation, an uninterrupted anticoagulation strategy is associated with a lower rate of AAE, either with VKA or NOAC. Our real-world results are reassuring of the benefit of an uninterrupted strategy and consistent with recent controlled trials.

Graph 1. Prevalence of antithrombotic therapies at the time of AF catheter ablation, over time.



PO 61 Figure 1

Table 1. - Any clinically relevant acute adverse event periprocedural of AF catheter ablation, according to antithrombotic strategy.

	VKA uninterrupted (N=45)	NOAC uninterrupted (N=595)	No therapy/ Antiaggregation/ interrupted (N=228)
Any clinically relevant acute adverse event	3 (6,7%)	36 (6,1%)	21 (9,2%)
Major acute adverse event	2 (4,4%)	21 (3,5%)	14 (6,1%)
Stroke / transient ischemic attack	0	5 (0,8%)	1 (0,4%)
Hemopericardium	2 (4,4%)	8 (1,3%)	7 (3,1%)
Vascular access related events	1 (2,2%)	6 (1,0%)	5 (2,2%)

PO 61 Figure 2

PO 62. THE ROLE OF THE CHARLSON COMORBIDITY INDEX IN PREDICTING LONG-TERM SURVIVAL AFTER PERMANENT PACEMAKER IMPLANTATION – IS OLD AGE ALL THAT MATTERS?

João Gameiro[1], Simone Costa[2], Carolina Saleiro[1], Diana Campos[1], José Sousa[1], Ana Rita Gomes[1], Luís Puga[1], Eric Monteiro[1], Gonçalo Costa[1], Joana Silva[1], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra. [2]Centro Hospitalar de Leiria/Hospital de Santo André.

Introduction: An augmented life expectancy and improved therapeutic options have increased the proportion of elderly patients (P) requiring pacemaker (PM) implantation, with > 80% of implantations being performed in P aged > 64 years. Although older age is normally associated with longer length of hospital stay and long-term mortality, its predictive capacity is low. The Charlson Comorbidity Index (CCI) predicts mortality and is frequently used for risk stratification in clinical practice, adding age to multiple comorbidities. The prognostic value of the CCI in P submitted to permanent PM implantation is still scarcely known.
Objectives: The purpose of this study is to assess the prognostic value of the CCI in a cohort of P after permanent PM implantation.
Methods: A retrospective cohort study from consecutive P submitted to a non-elective permanent PM implantation in our center, between January 2019 and December 2019. Baseline clinical data and in-hospital mortality were determined. Receiver operating characteristic (ROC) curves and area under curve (AUC) were calculated. The cut-off value for the CCI was derived from the Youden index. Predictors of long-term mortality and time to the first event were analysed using logistic regression and survival analysis with multivariate Cox regression model.
Results: A total of 279 P were included (59.3% male sex, mean age of 78.5 ± 11). In this cohort, the mean length of stay was 4.6 ± 6 days. In 66.8% of P (n = 187) a dual-chamber PM was implanted. The CCI was calculated for every patient, with a mean value of 5.36 ± 2. In-hospital mortality was 0.4% in this cohort. Long-term mortality in this cohort (with a mean follow-up of 16.8 months) was 12.5%, with 0.8% of P being admitted with an infected device. The CCI yielded an acceptable prognostic performance in predicting a longer length of stay using ROC analysis (AUC: 0.572, 95%CI: 0.504-0.640, p = 0.04), performing better than age (AUC: 0.542, 95%CI: 0.474-0.611, p = 0.227). The CCI also yielded a higher prognostic performance in predicting long-term mortality (AUC: 0.672, 95%CI: 0.576 - 0.769, p = 0.001) when compared with age (AUC: 0.639, 95%CI: 0.544 - 0.734, p = 0.008). A CCI > 6 was suggested as a predictive cut-off for higher long-term mortality by the Youden index calculated with this analysis. After dividing our cohort in two groups (CCI > 6 and CCI ≤ 6), we used a multivariate Cox regression analysis adjusted to confounding factors (age, gender, pacemaker type and days of hospitalization) that demonstrated a significant statistical impact of a CCI > 6 on long-term mortality (HR adjusted: 2.439, 95%CI: 1.126-5.284; p = 0.024).
Conclusions: The CCI is an easy to calculate tool, with good capacity to predict longer length of stay and long-term mortality in a cohort of P submitted to permanent PM implantation. Older age does not necessary mean worst outcomes and should not be the main clinical concern in this P.

PO 63. CHRONIC DIGOXIN UTILIZATION IN PATIENTS WITH ATRIAL FIBRILLATION IS ASSOCIATED WITH HOSPITALIZATION FOR DE NOVO ACUTE HEART FAILURE

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Hospital Amadora Sintra.

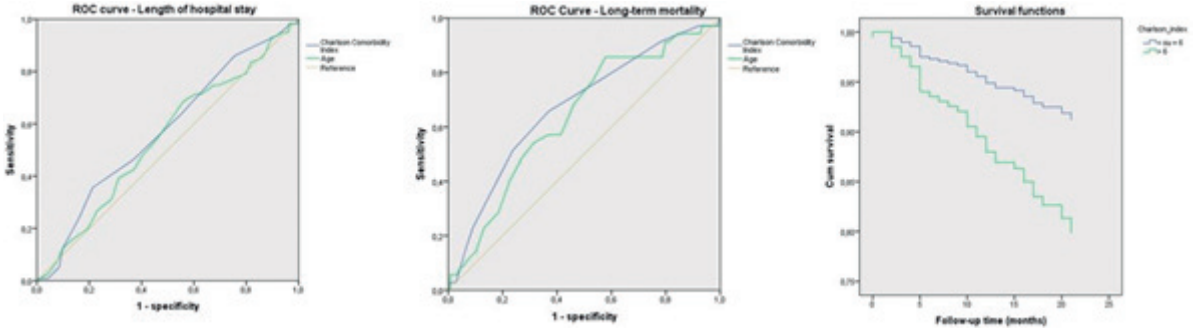
Introduction: The treatment of atrial fibrillation (AF) is complex. There are conflicting data regarding the effects of digoxin used for rate control in these patients.
Objectives: We aimed to evaluate the incidence of hospitalization for de novo acute heart failure (AHF) at 12-month follow-up in patients with atrial fibrillation who were under digoxin therapy.
Methods: We included retrospectively 2,181 consecutive patients with AF who were evaluated in our Emergency Department (ED) in a 12 month period. Among them, 423 patients were admitted for in-hospital management. Patients who had previous known heart failure (n = 101) were excluded. We determined the proportion of digoxin prescription at discharge. Primary outcome was the incidence of hospitalization for de novo AHF 12 months after discharge.
Results: We included 253 AF patients who were successfully discharged and followed for 12 months (mean age of 70.7 ± 12.6 years, 37.5% males). A total of 5.9% (n = 15) had digoxin prescribed at discharge. Kaplan-Meier analysis (Figure) showed that patients with AF who were taking digoxin had a higher incidence of de novo AHF 12 months after discharge (28.6 vs. 10.1%; log-rank p = 0.027). Multivariable Cox regression analysis controlled for age, gender, systemic hypertension, diabetes mellitus, pattern of AF (paroxysmal or non-paroxysmal), successful cardioversion at discharge, CHA2DS2VASc score, chronic kidney disease and glomerular filtration rate at discharge showed that digoxin therapy was an independent predictor of de novo AHF (HR 3.52; 95%CI 1.09-11.36; p = 0.035). There was a trend towards a higher mortality rate 12 months after discharge in AF patients taking digoxin (26.7 vs. 10.5%; p = 0.079).
Conclusions: Digoxin may be harmful in AF patients, as it is associated with hospitalization for de novo AHF, as well as a tendency towards higher mortality. This finding could have an impact on the management of patients with AF who are at risk of developing heart failure.

PO 64. REDO ABLATION FOR ATRIAL FIBRILLATION RECURRENCE POST RADIOFREQUENCY OR CRYOBALLOON ABLATION: A HIGH VOLUME SINGLE-CENTRE EXPERIENCE

Mariana Ribeiro da Silva, Gualter Santos Silva, Pedro Ribeiro Queirós, Rafael Teixeira, João Almeida, Paulo Fonseca, Marco Oliveira, Helena Gonçalves, Alberto Rodrigues, João Primo, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: Atrial fibrillation (AF) ablation is a well-established procedure for the treatment of AF. The cornerstone of AF ablation is the complete and



PO62 Figure

durable isolation of pulmonary veins (PV) through radiofrequency (RF) or cryoballoon (CB) ablation. However, PVI durability between RF or CB was not yet established, as reablation strategy and outcomes in patients (pt) undergoing a redo ablation.
Objectives: To compare RF versus CB regarding PVI status, reablation procedure and outcomes in pts undergoing a second procedure.
Methods: Single-centre retrospective study of pts who underwent a redo between 2016 and 2020. PVI status was assessed during electrophysiologic study with electroanatomic mapping system. Index procedures included second generation CB, conventional RF before 2018 and CLOSE protocol guided RF ablation after 2018. We assessed time-to-redo, number and location of reconnected PVs, procedural characteristics, acute and long-term outcomes between RF and CB index PVI.
Results: Seventy-four (55 RF and 19 CB) pts were included, 68.9% male, 71.6% had paroxysmal AF and a mean CHA2DS2-VASc score of 1.14 ± 1.0. No statistically significant differences were noticed in clinical and echocardiographic characteristics between pts within RF or CB cohorts. Median time to reablation was significantly longer in the RF cohort compared to CB (38.6 ± 33.6 vs 17.0 ± 9.5 months; p = 0.014). The number of reconnected PV was higher in CB than RF, although not significant (2.37 ± 1.2 vs 1.75 ± 1.4; p = 0.080). Right inferior PV was significantly more reconnected in pts within the CB group (73.7% vs 45.6%; p = 0.034), without differences in the other PV reconnection rates. Regarding reablation procedure, all pts were submitted to RF-redo. Fluoroscopy time was shorter for CB than RF cohort (7.4 ± 2.9 vs 13.3 ± 8.4; p = 0.002). There were no significant differences between the type of reablation (PVI only vs PVI plus other lesions or cavotricuspid isthmus ablation), with no difference in overall acute success. After the redo procedure, no differences were observed in recurrence rate in the blanking period and after 91 days from reablation. Nevertheless, time-to-recurrence (> 91 days) was longer for RF group (13.4 ± 10.7 vs 4.3 ± 1.5 months; p = 0.016). There were 2 pts in the RF group that were submitted to a third ablation procedure (p = 0.725). There were no differences between groups in the composite of adverse cardiovascular (CV) outcomes (stroke/transient ischemic attack, emergency room visit for AF, hospitalization for AF or CV death; p = 0.715).
Conclusions: After the index procedure, reablation occur later in RF than CB cohort. Although the number of reconnected PV were similar between groups, right inferior PV was significantly more reconnected in pts originally treated with CB. After redo, time-to-recurrence was shorter for CB cohort. Recurrence and composite of adverse CV outcomes were similar.

PO 65. PROGNOSTIC SIGNIFICANCE OF NON-SUSTAINED VENTRICULAR TACHYCARDIA ON STORED ELECTROGRAMS OF HEART FAILURE PATIENTS WITH CARDIOVASCULAR IMPLANTABLE ELECTRONIC DEVICES

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Introduction: Non-sustained ventricular tachycardia (NSVT) is commonly found in patients with structural heart disease and was historically obtained from registers of external ambulatory monitoring. The advent of Cardiac implantable electronic devices (CIEDs) has made it possible to detect asymptomatic NSVT in Heart Failure (HF) patients more frequently, but its true impact in real world is uncertain, and often does not lead to a change in clinical intervention.
Objectives: To determine the prognostic significance of NSVT detection on stored electrograms of CIEDs in HF patients with systolic left ventricle dysfunction.
Methods: We retrospectively enrolled 132 consecutive HF patients (mean age 67.5 ± 11.1 years, males 72.0%) with systolic left ventricle dysfunction and CIEDs (biventricular pacemakers with or without cardiac defibrillators). Patients were evaluated through CIEDs interrogation and clinical evaluations and divided into NSVT positive (Group 1) and negative groups (Group 2). Mean follow-up period was 62.8 ± 7.1 months.
Results: NSVT was detected in 51 (38.6%) patients. 70 (53.0%) had implantable cardiac resynchronization therapy (CRT) defibrillator (CRT-D), 37 (28.0%) transvenous implantable cardioverter defibrillator (ICD), 13 (9.8%) CRT pacemaker (CRT-P) and 12 (9.1%) subcutaneous ICD (S-ICD). Medium left ventricular ejection fraction (LVEF) was 31.1 ± 7.9%, 20.6% were in NYHA III-IV and 47.0% were ischemic (49% Group 1 and 45.7% Group 2, p = 0.708). Dyslipidemia was more prevalent in Group 2 (p = 0.042). In total 11 (8.3%) patients died, 2 (1.5%) from sudden cardiac death and 5 (3.8%) from cardiovascular death. NSVT was associated with CIEDs treatments (hazard ratio [HR]: 2.52; 95% confidence interval [CI]: 1.2-5.1; p = 0.001), ventricular fibrillation (VF) (HR: 3.71, 95%CI: 1.19-11.58; p = 0.018), sustained ventricular tachycardia (VT) (HR: 9.06, 95%CI: 2.82-29.12; p < 0.05) and composite outcome of VT, VF, HF re-admissions and related admissions to emergency department (ED) and death by all causes (HR: 2.52; 95%CI: 1.20-5.10; p = 0.011). NSVT at 1 year was associated with HF readmissions at 1 year (p = 0.004).
Conclusions: On extended monitoring possible with CIEDs, NSVT in HF patients was associated with a worse prognosis and may serve as a predictor of significant arrhythmic events, HF hospitalizations and mortality. These findings enhance the importance of remote monitoring and optimization of therapeutic modalities in these patients along with a close supervision.

PO 66. ECHOCARDIOGRAPHIC BUT NOT CLINICAL RESPONSE TO CRT IS AN INDEPENDENT PREDICTOR OF A BETTER SURVIVAL FREE FROM ARRHYTHMIC EVENTS

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Introduction: Cardiac resynchronization therapy (CRT) is of proven benefit in heart failure patients, improving mortality and reducing hospital admissions. There is however uncertainty if the arrhythmic risk is reduced in responders.
Objectives: We aimed to assess if patients with a CRT implanted for primary prevention had less arrhythmic episodes if they responded to this therapy and if echocardiographic and clinical responses to CRT differ regarding the occurrence of ventricular arrhythmias.
Methods: We prospectively enrolled patients that underwent CRT implant for primary prevention according to ESC guidelines. Patients were classified as responders if they fulfilled one of four criteria (echocardiographic or clinical) at six months after implant: a 5% absolute improvement in LV ejection fraction (LVEF), a 15% improvement in LVEF, a 15% decrease in LV end-diastolic volume or a decrease in NYHA class. During follow-up with device interrogation, arrhythmic ventricular events (AVE) were classified as appropriate ICD therapies or sustained ventricular tachycardia either occurring in ICD monitoring zones or undetected by the device due to a slower rate, but clinically documented. All patients were further classified according to type of pacing, biventricular or LV only. Demographic characteristics of patients were also assessed.
Results: We enrolled 73 patients, 58 (79.5%) male, median age of 72 (65-77) years. Median LVEF was 28 (22-35)% (p = 0.95 between groups), ischemic etiology in 36 (46.6%, p = 1.00). The two groups, with and without AVE, did not differ significantly regarding clinical, echocardiographic or electrocardiographic characteristics (table). CRT echocardiographic response criteria were met by 49 (67.1%) of patients and clinical criteria by 53 (72.6%) patients. AVE occurred in 15 (20.5%) patients. In univariate regression analysis, echocardiographic response was associated with reduced AVE (OR 0.14; p = 0.005). Clinical response to CRT was not associated with AVE (p = 0.07). LV only pacing was associated with a higher probability of AVE (OR 5.1; p = 0.038). In multivariate Cox regression for survival analysis, response to CRT was the only independent predictor of better survival free from AVE (HR 0.28; 95%CI, p = 0.044) and LV only pacing was not associated with more episodes of ventricular arrhythmias (p = 0.17).
Conclusions: Echocardiographic, but not clinical response to CRT therapy, is the only independent predictor of a higher survival free from arrhythmic

	Patients with AVE (n=15)	Patients without AVE (n=58)	p
Age (years; median, IQR)	72 (65-76)	62 (64-77)	1,0
Male Gender (n, %)	12 (80)	43 (74)	1,0
Hypertension (n, %)	11 (73.3)	45 (77.6)	0,44
Type 2 Diabetes Mellitus (n, %)	8 (53.3)	26 (44.8)	1,0
Atrial Fibrillation (n, %)	13 (86.6)	37 (63.8)	0,20
Chronic kidney disease (n, %)	5 (33.3)	19 (32.8)	1,0
Beta blockers (n, %)	15 (100)	50 (86.2)	1,0
Amiodarone (n, %)	9 (60)	17 (29.3)	0,07
LVEF (%; median, IQR)	25 (17-28)	26 (21-32)	0,99
Echocardiographic responder (n, %)	8 (53.3)	41 (70.7)	0,006
Clinical Responders (n, %)	9 (60)	44 (75.9)	0,11
LV only pacing (n, %)	4 (26.7)	4 (6.9)	0,038
Ischemic cardiomyopathy (n, %)	8 (53.3)	23 (39.7)	0,56
Left Bundle Branch Block (n, %)	8 (53.3)	38 (65.5)	0,67
QRS width (ms; median, IQR)	161 (150-168)	160 (138-170)	1,0
Death (n, %)	7 (46.7)	12 (20.7)	0,09
Cardiovascular death (n, %)	4 (26.7)	2 (3.4)	0,014

(LVEF – Left Ventricle Ejection Fraction)

Table. Characteristics of patients

PO 66 Figure

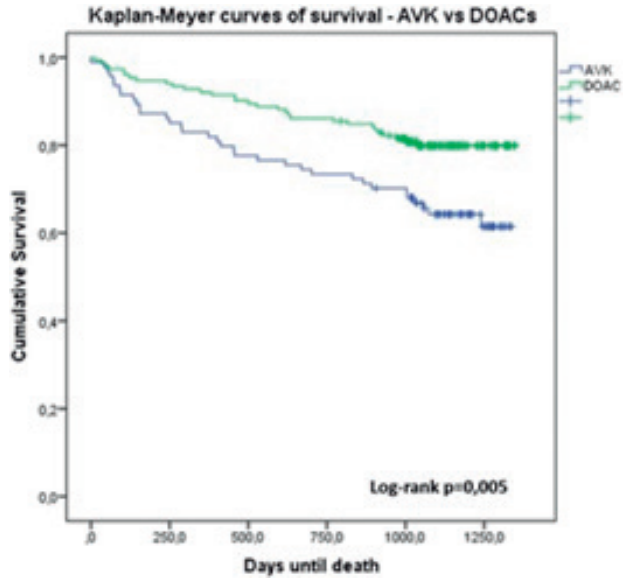
events. In spite controversies regarding the arrhythmogenic role of LV pacing, this was not associated with higher ventricular arrhythmic events.

PO 67. LONG-TERM OUTCOMES OF VITAMIN K ANTAGONISTS VERSUS DIRECT ORAL ANTICOAGULATION

João Baltazar Ferreira, Marco Beringuilho, Daniel Faria, João Bicho Augusto, David Roque, Inês Fialho, Miguel Santos, Mariana Passos, Carlos Morais

Hospital Prof. Doutor Fernando Fonseca.

Introduction: Atrial fibrillation (AF) is a well-known cause of adverse outcomes. We aimed to compare adverse outcomes at 3 years follow-up in patients with AF under vitamin K antagonists (AVK) versus direct oral anticoagulants (DOACs).



Methods: 2181 consecutive patients with AF who were evaluated in our emergency department (ED) in a 12-month period were included retrospectively in our study. Among them, 423 patients were admitted for in-hospital management. We reviewed all medical charts before discharge and recorded which oral anticoagulant was prescribed (AVK or DOAC – dabigatran, rivaroxaban or apixaban). Primary outcomes were defined as all-cause mortality and stroke at 3 years follow-up after discharge.
Results: 247 patients were successfully discharged under oral anticoagulation; mean age was 70.8 ± 0.7 years, 36.8% were males. Follow-up was possible in 98.5% of our population. Stroke rate was 7.3% (n = 18) and all-cause mortality was 26% (n = 64). Stroke rate was not significantly different between AVKs and DOACs (8.5 vs 6.6%, respectively, p = 0.619). However, death rate was significantly higher in patients under AVK therapy (36.2 vs 19.7%, p = 0.007). Kaplan-Meyer curves of survival according to AVK vs DOAC therapy are shown in Figure. No significant differences in stroke (p = 0.209) or death rates (p = 0.793) were found between different DOACs.
Conclusions: In patients with AF, AVKs were associated with rates of stroke that were similar to DOACs, but increased rates of all-cause mortality.

PO 68. ARRHYTHMIA-INDUCED CARDIOMYOPATHY: UNVEILED AFTER ELECTRICAL CARDIOVERSION

Raquel Menezes Fernandes, Teresa Mota, Hugo Costa, Miguel Espírito Santo, Dina Bento, Rui Candeias, Jorge Mimoso, Ilídio Jesus

Centro Hospitalar do Algarve, EPE/Hospital de Faro.

Introduction: Arrhythmia-induced cardiomyopathy (AIC) is an important cause of left ventricular (LV) dysfunction, confirmed by the reversal of cardiomyopathy after controlling the arrhythmia. It requires a high index of suspicion.
Objectives: To determine the prevalence and prognosis of AIC in patients referred to electrical cardioversion (EC) due to atrial fibrillation (AF) or atrial flutter (AFL).
Methods: We conducted a retrospective study encompassing patients referred to EC due to AF/AFL in our Cardiology Department, from September 2011 to September 2020. Clinical characteristics, echocardiographic studies and follow-up data were analysed. Reduced LV ejection fraction (LVEF) was defined as LVEF lower than 50%. Primary endpoints were all-cause mortality and cardiovascular (CV) death. We excluded patients with no information regarding LVEF before and after the EC.
Results: A total of 719 patients were referred to EC during the 9-year period, with a median age of 67 years-old and 70.4% male predominance. EC was successfully performed in 93.2%. Regarding patients with LVEF data, only 123 patients (28.9%) had reduced LVEF before EC. Of these, 24.4% of patients were diagnosed with AFL, 59.3% had arterial hypertension, 26.9% were obese, 24.4% had ischemic heart disease and 7.3% had sleep apnea.

Persistent AF/AFL was identified in 60.3%, 23.1% presented with first diagnosed AF/AFL and 15.7% had paroxysmal episodes. 57 patients (46.3%) had documented reversal of LV dysfunction after EC (improvement of a median LVEF of 41% to 59% after EC), confirming AIC diagnosis. Comparing to patients who did not recover LV function after EC, AIC patients had a larger prevalence of persistent AF/ALF (75% vs 45.2%; p = 0.01), were more frequently cardioverted in an outpatient setting (68.4% vs 46%; p = 0.047) and had a lower prevalence of ischemic heart disease (5.3% vs 42.9%; p < 0.001) and stroke (1.8% vs 12.7%; p = 0.023). They also had lower values of CHA2DS2-VASc (2.23 vs 3.19; p < 0.001) and HAS-BLED scores (0.6 vs 1.03; p = 0.005) and were more treated with direct oral anticoagulants (77.8% vs 54.5%; p = 0.01) than vitamin K antagonists. 64.6% remained in sinus rhythm one year after EC (vs 42.6%; p = 0.026). During a median follow-up of 1338 days, no significant differences were found regarding all-cause mortality, but we report a lower rate of CV death in AIC patients (3.8% vs 25.5%; p = 0.002).
Conclusions: In our study, 46.3% of patients with reduced LVEF had AIC, which was associated with a significantly lower rate of CV death. Given the prognostic impact of this diagnosis, EC should be considered as a primary strategy in patients with high suspicion of AIC due to AF/AFL.

PO 69. CATHETER ABLATION AS A TREATMENT FOR ATRIAL FIBRILLATION: EXPERIENCE AND RESULTS FROM A HIGH VOLUME PORTUGUESE TERTIARY CENTER

Pedro Ribeiro Queirós, Gualter Silva, Mariana Silva, João Almeida, Paulo Fonseca, Diogo Ferreira, Fábio Nunes, Mariana Brandão, Rafael Teixeira, Marco Oliveira, Helena Gonçalves, Nuno Dias Ferreira, João Primo, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

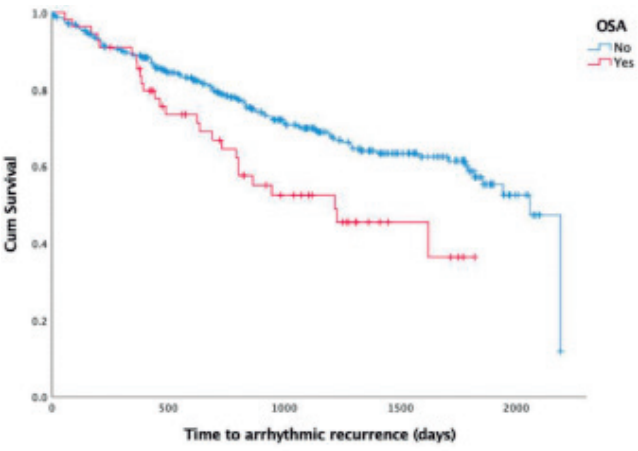
Background/Introduction: Catheter ablation (CA) is established as a treatment option to reduce disease burden in atrial fibrillation (AF) patients, especially those refractory to antiarrhythmic drugs (AAD). However, data describing the experience and results with this technique is still lacking.
Objectives: To describe the characteristics, complications and outcomes of AF patients treated with CA for AF at our centre.
Methods: Patients undergoing CA for AF at our center between January 2017 and October 2019 were retrospectively analysed.
Results: A total of 444 patients were included. Average follow up time was 2.3 ± 1.0 years. Mean age was 56.4 ± 11.7 years. Sixty-five percent of patients were male (n = 290). Mean body mass index was 27.4 ± 4.0 kg/m^2, and mean CHA_2DS_2-VASc score was 1.44 ± 1.3. Heart failure was present in 8.6% of patients (n = 38) and 11.5% had moderate/severe mitral disease (n = 51); mean indexed left atrial volume was 38.3 ± 12.6 mL/m^2. Average time since the diagnosis of AF was 3.6 ± 3.4 years, and 80.6% had paroxysmal AF (n = 358), with 21.5% having also typical or atypical atrial flutter (n = 50). AAD were prescribed in 57.6% of patients at the time of ablation, and 37.9% had done at least one electrical cardioversion previously (n = 139). Only 6.8% of patients were undergoing a redo procedure (n = 30), all of whom had at least one pulmonary vein reconnected. Radiofrequency (RF) and cryoballoon (CB) were the techniques utilised for ablation, with RF used more commonly (70.0% vs. 30.0%); when atrial mapping was done, low voltage areas were found in 9.1% (n = 31). The procedure lasted 110 ± 24 minutes on average, with the RF ones lasting longer (118.5 ± 21.2 vs. 90.9 ± 19.6 minutes; p < 0.001) but resulting in lower fluoroscopy time (10.2 ± 5.9 vs. 80.4 ± 21.4 minutes; p < 0.001) and radiation doses (141.8 ± 109.8 vs. 266.6 ± 157.0 uGy; p < 0.001). Isolation of all pulmonary veins was achieved in 94.4% (n = 418). Complications were reported in 4.5% of procedures (n = 20); local haematoma was the most common (1.5%, n = 7), and severe complications (major bleeding, cardiac tamponade, myocardial infarction, stroke/TIA or, atrio-esophageal fistula) were rare (1.1%, n = 5). AF was detected during the blanking period in 12.8% (n = 57), and this translated to AF recurrence in 78.9% (n = 45). Overall recurrence rate was 28.2% (n = 125), most commonly as paroxysmal AF (75.2%, n = 94); however, average time to recurrence was 2.0 ± 1.1 years and symptoms were absent in 29.6% (n = 37). A redo procedure was needed in 9.4% (n = 42). Major adverse events (cardiovascular death, emergency room visits for AF, hospital admission for AF, stroke/TIA) were reported in 11.4% (n = 51), mostly due to visits to emergency room visits for AF (90.2%, n = 46).
Conclusions: In our cohort, CA was successfully used to treat AF, resulting in significant time free from AF and apparently decreasing AF burden with a low complication rate.

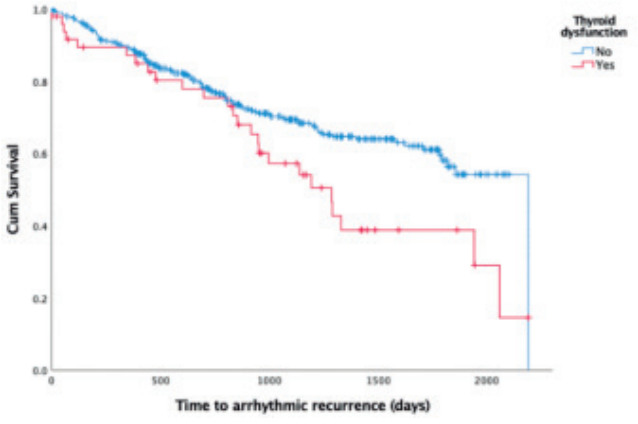
PO 70. PREDICTORS OF ARRHYTHMIC RECURRENCE AFTER TYPICAL ATRIAL FLUTTER ABLATION

Pedro Alves da Silva[1], Tiago Rodrigues[2], Nelson Cunha[2], Pedro Silvério António[2], Sara Couto Pereira[2], Joana Brito[2], Beatriz Valente Silva[2], Catarina Oliveira[2], Ana Beatriz Garcia[2], Ana Margarida Martins[2], Ana Bernardes[2], Gustavo Silva[2], Nuno Cortez-Dias[2], Fausto J. Pinto[2], João de Sousa[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Cavo-tricuspid isthmus ablation (CTA) is the first line treatment for adequate rhythm control in patients (pts) with typical atrial flutter (AFL). However the burden of arrhythmic recurrence after CTA is unknown.
Objectives: We aimed to identify predictors of arrhythmic recurrence (AR) after CTA.
Methods: Single-center retrospective study of patients (pts) submitted to CTA between 2015 and 2019, comprising three groups: I – pts with lone AFL; II – patients with AFL and prior AF submitted to CTA only; and III – patients with AFL and prior AF submitted to IVP and CTA. Clinical records and Holter and/or 7-day event loop recorder were performed during the follow up, to determine the AR (defined as typical/atypical AFL and atrial fibrillation (AF)). Kaplan Meier survival curves were used to estimate the risk of events and the groups were compared using uni- and multivariate Cox regression analyses.





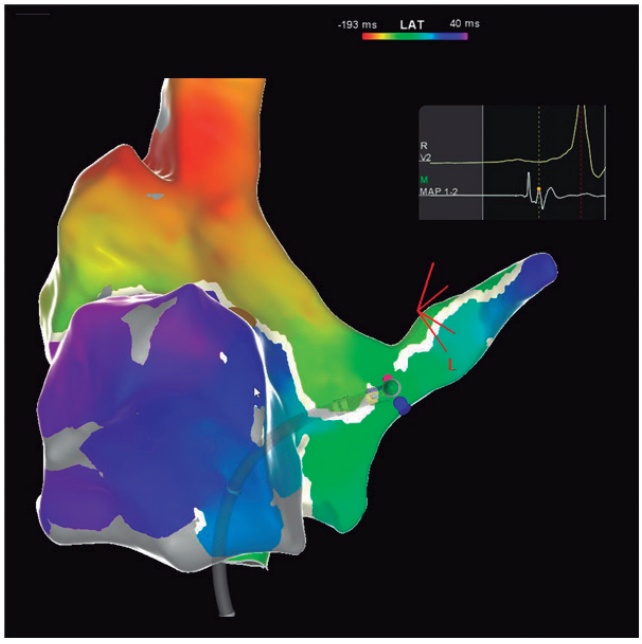
Results: A total of 476 pts (66 ± 12 years, 80% males) underwent CTA: group I – 284 pts (60%), II – 109 pts (23%) and III – 83 pts (17%). Baseline characteristics were similar between groups, except for age with group I pts being older (68 ± 12, 67 ± 11, 61 ± 11, p < 0.03). Before the CTA ablation, 269 pts (57.6%) were under anti-arrhythmic therapy (AAT), which was suspended in 58 pts before and in 8 pts after AR. During a median follow-up period of 2.8 year, we observed AR of typical AFL in 17 pts (3.6%), atypical AFL in 35 pts (7.4%) and AF in 118 pts (24.8%). On our population of study, peripheral arterial disease (PAD, p = 0.024), cerebrovascular disease (p = 0.049), obstructive sleep apnea (OSA, p = 0.009) and thyroid dysfunction (p = 0.005) were predictors of AR on univariate analysis, being the last two also independent predictors (HR 0.57; 95%CI 0.368-0.882, p = 0.012 and HR 0.589; 95%CI 0.380-0.913, p = 0.018, respectively). The withdrawn of AAT didn't seem to predict AR (p = NS). We did not find predictors of recurrence of typical AFL. Regarding occurrence of atypical AFL, only a higher body mass index (BMI, p = 0.005) was a predictor of this arrhythmia (more frequent with BMI between 25 and 30). In group I, PAD (p < 0.001), OSA (p = 0.03), thyroid dysfunction (p = 0.038) and a higher CHADs-VASc score (p = 0.003) were predictors of AR. On multivariate analysis, only PAD (HR 0.434; 95%CI 0.196-0.964, p = 0.04) and OSA (HR 0.46; 95%CI 0.249-0.849, p = 0.013) were independent predictors. In patients with AF we did not find predictors of AR.
Conclusions: After CTA ablation, AF is the most frequent recurrent arrhythmia, being thyroid dysfunction, OSA and PAD predictors of recurrence. The withdrawal of AAT didn't predict the recurrence of arrhythmic events. The decision to stop anticoagulation and arrhythmic therapy must be individualized regarding patients' clinical characteristics.

PO 71. OPEN-WINDOW AND AUTOMATED ACCESSORY PATHWAY MAPPING IN WOLFF-PARKINSON-WHITE SYNDROME

Guilherme Portugal[1], Bruno Valente[1], Pedro Silva Cunha[1], Sérgio Laranjo[1], Madalena Coutinho Cruz[1], Pedro Brás[1], Hélder Santos[2], Vera Ferreira[1], Alexandra Castelo[1], Rui Cruz Ferreira[1], Mário Oliveira[1]

[1]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [2]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário.

Introduction: Accessory pathway (AP) ablation is usually guided by earliest ventricular or atrial activation and AV fusion. Open-window mapping is a novel technique allowing more accurate spatial representation of AP location and course. We report on our initial experience with this mapping technique.
Methods: Feasibility of open-window mapping was retrospectively assessed by reprocessing maps of successful overt or concealed AP ablations at representative locations; we evaluated the agreement between the effective ablation site and location of the AP corridor on open-window mapping (Ensite Precision, Abbott). For validation, a prospective series was performed (CARTO, Biosense Webster). The atria, annulus and inflow tract were mapped with window of interest (WOI) from P wave onset to end of QRS using the surface ECG as timing reference. We employed an EEML threshold of 35 ms for electrical annulus annotation.
Results: A total of 13 patients were included. In the retrospective series, the successful radiofrequency (RF) application was located within the open-window AP corridor in all (7/7) maps. The prospective series included 6 patients with differing AP location - right lateral AP, right mesoseptal AP, epicardial posteroseptal AP, left lateral AP (2) and left posterior AP. AP location was adequately mapped in all cases. In this representative case of an epicardial posteroseptal AP (Figure), the activation map with automatic AV annulus tagging (white line, EEML) demonstrates a gap in the electrical AV annulus within the coronary sinus. This site was targeted with radiofrequency (RF) ablation (blue dot), eliminating pathway conduction in 2 seconds. Procedure duration or success did not differ significantly between both patient groups (p = ns), although fluoroscopy time was lower in the prospective series (p = 0.032). No complications were observed.
Conclusions: Open-window mapping is feasible technique, allowing fast and automated localization of APs. This technique may aid in the treatment of AP ablation, especially in challenging scenarios.

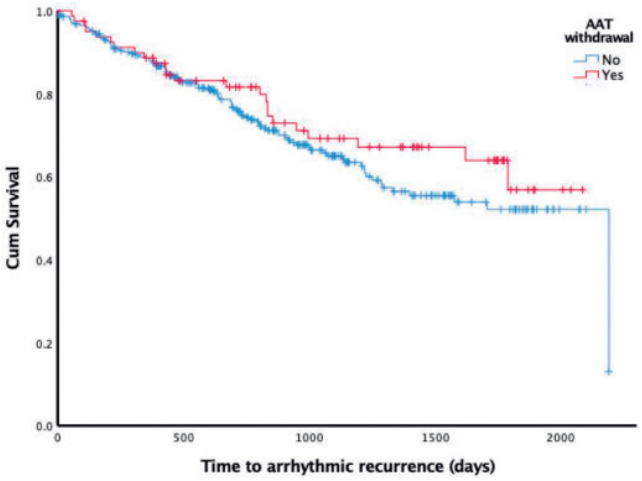


PO 72. WITHDRAWAL OF ANTI-ARRHYTHMIC THERAPY AFTER CAVO-TRICUSPID ISTHMUS ABLATION OF TYPICAL ATRIAL FLUTTER

Catarina Simões de Oliveira[1], Tiago Rodrigues[2], Nelson Cunha[2], Pedro Silvério António[2], Sara Couto Pereira[2], Beatriz Valente Silva[2], Joana Brito[2], Pedro Alves da Silva[2], Beatriz Garcia[2], Ana Margarida Martins[2], Maria do Céu Barreiros[2], Gustavo Lima da Silva[2], Luís Carpinteiro[2], Nuno Cortez Dias[2], Fausto J. Pinto[2], João de Sousa[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Medical management of typical atrial flutter (AFL) is sometimes unsuccessful and may have adverse effects. Symptom control using radiofrequency cavo-tricuspid isthmus ablation (CTA) is a feasable alternative, given the fact that it is a simple procedure with a low rate of complications. However, in some patients (pts), new atrial arrhythmias may develop and the decision of anti-arrhythmic therapy (AAT) withdrawal is usually patient-based.
Objectives: To predict the recurrence of atrial arrhythmias (AR) after CTI ablation between pts that suspended AAT and those that maintained AAT.
Methods: Single-center retrospective study of pts with typical AFL submitted to ablation between 2015 and 2019. Pts clinical characteristics, current and follow up therapy were collected. Holter and/or 7-day event loop recorder were performed during the follow up to identify AR. For statistical analysis, we applied Chi-square, Mann-Whitney and Cox regression to identify predictors of AR.
Results: CTA ablation was performed in 476 pts (mean age: 66.3 ± 11.7 years, 79.8% males). At time of ablation most pts were in EHRA II class (70.8%) and 44.6% of pts had at least mild left atrial dilatation on transthoracic echocardiography. The mean follow up time was 2.8 years. Two-hundred sixty-nine pts (57.6%) were under anti-arrhythmic therapy (AAT) before the ablation. After the procedure, 58 pts withdrawn AAT before AR and 8 pts after AR. During the follow-up period, we observed AR of typical AFL in 17 pts (3.6%), atypical AFL in 35 pts (7.4%) and AF in 118 pts (24.8%). There were no statistically significant differences regarding AR between pts that maintained and suspended AAT (p = NS). Concerning the pts that suspended AAT, thyroid disfunction (p = 0.012), higher CHADs-VASc score (p = 0.033), ischemic cardiomyopathy (p = 0.001) and tobacco abuse (p = 0.005) were predictors of AR, being the last two also independent predictors (HR 0.243; 95%CI 0.76-0.778, p = 0.017; HR 4.449; 95%CI 1.128-17.553, p = 0.033, respectively).



Conclusions: After CTA ablation, AF is the most frequent recurrent arrhythmia. Interestingly, the withdrawn of AAT didn't seem to predict the recurrence of arrhythmic events. The decision interrupt AAT must be individualized regarding patients' clinical characteristics.

PO 73. ELECTRICAL ANATOMY OF THE LEFT ATRIUM DURING ATRIAL FIBRILLATION

Pedro Adragão, Daniel Matos, Francisco Costa, Pedro Galvão Santos, Gustavo Rodrigues, João Carmo, Pedro Carmo, Diogo Cavaco, Francisco Morgado, Miguel Mendes

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Twenty years ago, pulmonary veins (PV) ostia were identified as the left atrium (LA) areas with the shortest refractory period during sinus rhythm. Pulmonary veins isolation (PVI) became standard of care, but clinical results are still suboptimal. Today, a special tool using the Carto® electroanatomical mapping (EAM) allows for AF cycle length mapping (CLM), to identify the areas in the left atria with shortest refractory period, during atrial fibrillation. Using this EAM tool, our study aimed to find the LA areas with the shortest refractory period to better recognize electrical targets for catheter ablation.

Methods: Retrospective analysis of an unicentric registry of individuals with symptomatic drug-refractory AF who underwent PVI with Carto® EAM. CLM was performed with a high-density mapping Pentaray® catheter before and after PVI and in 4 redo procedures. We assessed areas of short cycle length (SCL) (defined as 120 to 250 ms), and their relationships with complex fractionated atrial electrograms (CFAE), and low-voltage zones (from 0.1 to 0.3 mV).

Results: A total of 18 patients (8 men, median age 63, IQR 58-71 years) were included. Most patients presented with persistent AF (n = 12, 67%), and 4 patients (22%) had a previous PVI. The mean shortest measured cycle length in AF was 140 ms (SD ± 27 ms) TCL. All patients presented areas of SCL located in the PVs or their insertion, 70% in the posterior/roof region adjacent to the left superior pulmonary vein (LSPV) and 60% in the anterior region of the right superior pulmonary vein (RSPV). These two areas remained the fastest even after PVI. The anterior mitral region rarely presented SCL (17%). SCL were related to low-voltage areas in 94% and were adjacent to CFAE. Low-voltage areas and CFAE were more frequent and had a larger LA dispersion than SCL.

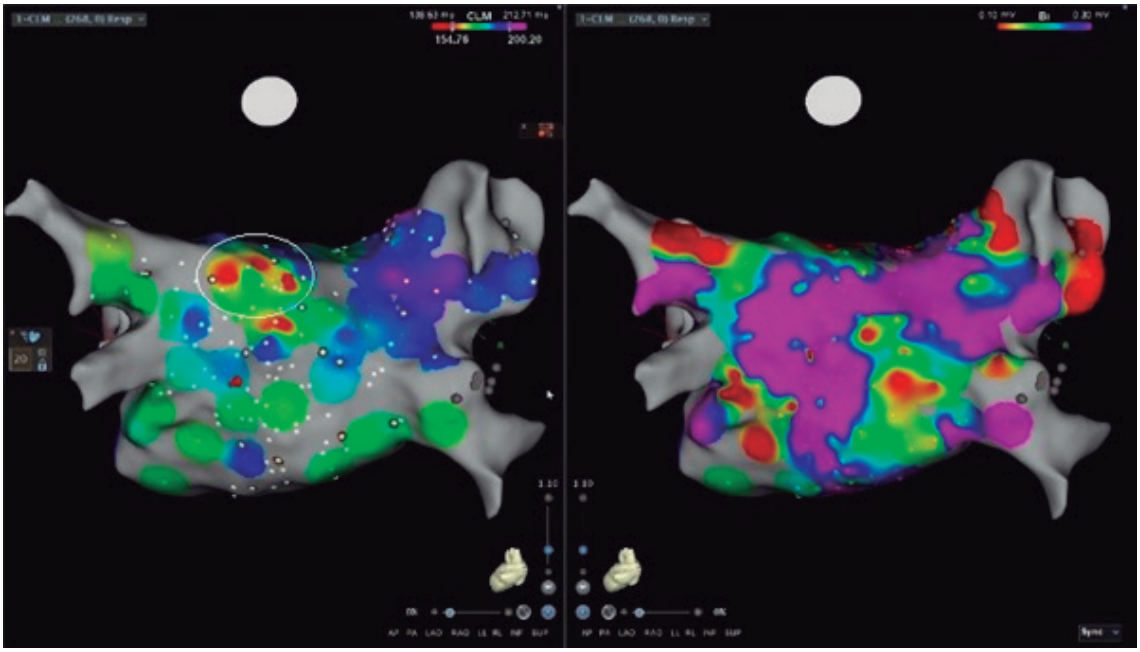
Conclusions: We confirmed in 3D mapping that PVs are the LA zones with shortest refractory period, not only in sinus rhythm but also during AF. The persistence of SCL areas in the border zones of the PVI lines suggests the benefit of a more extensive CLM guided ablation. Larger studies are needed.

PO 74. CLOSE PROTOCOL WITH CENTER-SPECIFIC ABLATION INDEX TARGET IN AF ABLATION

Tânia Proença, Miguel Martins Carvalho, Ricardo Alves Pinto, Catarina Costa, Carlos Xavier Resende, Pedro Diogo Grilo, João Calvão, Ana Filipa Amador, Gonçalo Pestana, Ana Lebreiro, Luís Adão, Filipe Macedo

Centro Hospitalar de S. João, EPE.

Introduction: Pulmonary vein (PV) isolation is an established treatment for atrial fibrillation (AF). A contact force (CF)-guided ablation protocol respecting region-specific criteria of lesion contiguity and lesion depth ('CLOSE' protocol) has been associated with high incidence of acute durable PV isolation and a high single-procedure arrhythmia-free survival at 1 year. Differences in ablation index (AI) targets exist between centers, and its optimal value remains unknown.



PO 73 Figure

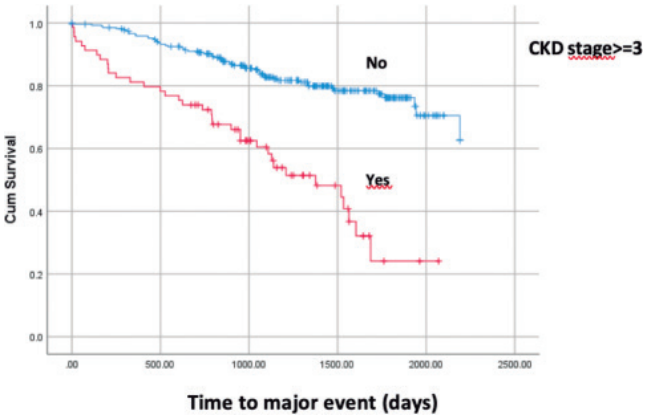
Objectives: In the present study, we sought to evaluate the safety and outcomes of our local ablation protocol.
Methods: We retrospectively analyzed 37 patients with paroxysmal AF who underwent antral PV encircling using a CF-sensing catheter in a tertiary center from January 2018 to November 2019. Radiofrequency (RF) was delivered targeting interlesion distance ≤ 6 mm and ablation index (AI) ≥ 380 at posterior wall and ≥ 500 at anterior wall. Cavotricuspid isthmus (CTI) ablation was performed if previous typical atrial flutter was documented. PV isolation was documented with entrance- and exit block and the use of adenosine. Recurrence was defined as any AF, atrial tachycardia (AT), or atrial flutter (AFL) (AF/AT/AFL > 30 s) on 24-hour Holter monitoring or 12-lead ECG at 3, 6, and 12 months; or symptoms recurrence.
Results: 37 consecutive patients (70% male, median age 53 years-old) underwent antral PV encircling. 30 patients were taking antiarrhythmic drug (AAD) and 12 were submitted to previous cardioversion (11 with successful cardioversion to sinus rhythm). At the beginning of the procedure only one patient had AF. Procedure and fluoroscopy time were 100 ± 19.6 min and 5 ± 2.0 min, respectively. Mean AI values, CF and RF time per lesion, were as follows: anterior left PVs - 490 ± 21, 9.5 ± 1.9 g, 32.0 ± 5.1 sec; posterior left PVs – 383 ± 11, 10.5 ± 3.5 g, 28.8 ± 5 sec; anterior right PVs - 498 ± 15, 12 ± 2.9 g, 32.3 ± 4.8 sec; posterior right PVs – 384 ± 12, 10.3 ± 2.2 g, 27.9 ± 3.1 sec. Incidence of first-pass and adenosine-proof isolation were 97% and 95%, respectively. Touch up lesions were applied to ensure isolation, with 100% success at the end of the procedure. CTI ablation was performed in 22% of cases, achieving bidirectional block in all. 76% of patients were discharged on AAD and 24% maintained AAD at one-year follow-up. At 12 months, single-procedure freedom from recurrence was 89%. Only one patient had an acute complication, a femoral haematoma that solved with local compression.
Conclusions: Our initial experience with "CLOSE" protocol with specific AI target supports that an ablation respecting the referred predefined criteria for lesion depth and contiguity results in safe and efficient outcomes with 89% of patients free of arrhythmia during 12-month follow-up.

PO 75. TYPICAL ATRIAL FLUTTER ABLATION – PREDICTORS OF EVENTS IN THE FOLLOW-UP

Ana Margarida Martins, Tiago Rodrigues, Nelson Cunha, Pedro Silvério António, Sara Couto Pereira, Pedro Alves da Silva, Joana Brito, Beatriz Valente Silva, Beatriz Garcia, Catarina Oliveira, Gustavo Lima da Silva, Luís Carpinteiro, Nuno Cortez Dias, Fausto J. Pinto, João de Sousa

Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Cavotricuspid isthmus ablation (CTA) is considered the main treatment for rhythm control in patients (pts) with typical atrial flutter (AFL). Although there is an established risk for embolic events in atrial fibrillation (AF), the results are not standardized for typical AFL. Currently, anticoagulation in AFL pts submitted to ablation is not consensual.
Objectives: To determine the incidence and predictors of major cardiovascular events (MACE) of pts submitted to CTA of typical AFL.
Methods: Single-center retrospective study of patients (pts) submitted to CTA between 2015 and 2019, comprising three groups: I – pts with lone AFL; II – patients with AFL and prior AF submitted to CTA only; and III – patients with AFL and prior AF submitted to IVP and CTA. Clinical records were analyzed to determine the occurrence of MACE during the long-term follow up, defined as death (of cardiovascular or unknown cause), stroke, clinically relevant bleed or hospitalization due to heart failure or arrhythmic events. Kaplan Meier survival curves were used to estimate the risk of events and the groups were compared using uni- and multivariate Cox regression analyses.
Results: A total of 476 pts (66 ± 12 years, 80% males) underwent CTA: group I – 284 pts (60%), II – 109 pts (23%) and III – 83 pts (17%). Baseline characteristics were similar between groups, except for age with group I pts being older (68 ± 12, 67 ± 11, 61 ± 11, p < 0.03). At presentation, the majority of the pts had palpitations (70.4%) and mild symptoms (70.8%). HTN and dyslipidemia were the most frequent cardiovascular risk factors, 69.5% and 53.9%, respectively, and heart failure was not frequent (27.7%) with only 5.4% of pts with LVEF< 30% and 12.4% with left atrium > 50 ml/m². During a mean follow-up of 2.8 years, the incidence of MACE events was 102 (21.4%). Regarding MACE components: 54 pts (11.5%) died from cardiovascular death, 20 pts had stroke (4.5%), 13 (3.8%) had a clinically relevant bleeding event, and 51 pts (11.4%) were hospitalized due to heart failure or arrhythmic events. On univariate analysis, arterial peripheric disease (p = 0.018), HTN (p = 0.046), chronic kidney disease (p < 0.001), chronic pulmonary disease (p = 0.0024), heart failure (p < 0.001), cerebrovascular disease (p 0.029), body mass index (p = 0.01), age (p < 0.001), CHADsVASc score (p < 0.001) and left atrial diameter (p = 0.01) were associated with the occurrence of MACE. However only age (HR 1.073; 95%CI 1.03-1.06, p < 0.001) and chronic kidney disease (HR 0.37; 95%CI 0.186-0.765, p = 0.007) were independent predictors of major events.



Conclusions: In our cohort of pts with AFL, stroke and bleeding occurred in a minority of pts. Age and chronic kidney disease predicted MACE events during follow-up.

PO 76. IS CHA2DS2VASC SCORE RELIABLE AS PROGNOSTIC MARKER IN ATRIAL FLUTTER?

Pedro Silvério António[1], Tiago Rodrigues[2], Joana Brito[2], Sara Couto Pereira[2], Nelson Cunha[2], Pedro Alves da Silva[2], Beatriz Silva[2], Beatriz Garcia[2], Catarina Oliveira[2], Ana Margarida Martins[2], Ana Bernardes[2], Gustavo Lima da Silva[2], Nuno Cortez-Dias[2], Luís Carpinteiro[2], Fausto J. Pinto[2], João de Sousa[2]

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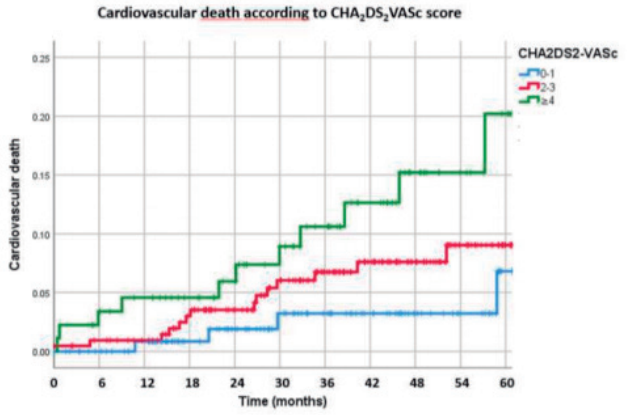
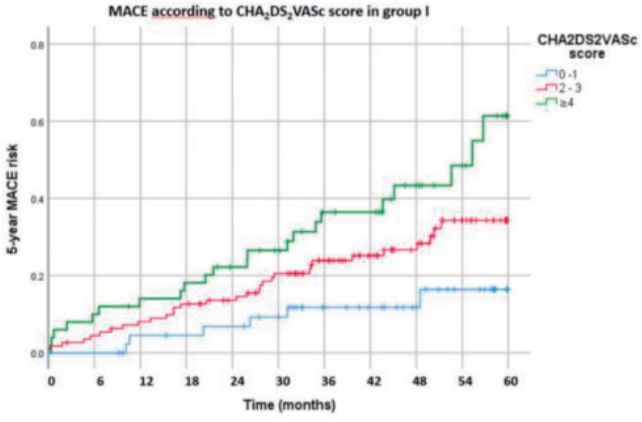
Introduction: CHA_2DS_2VASc score is a well stablished prognostic score in atrial fibrillation population. However, considering patients with isolated atrial flutter no prognostic score are defined, regarding the embolic risk of this population.
Objectives: To evaluate the accuracy of CHA_2DS_2VASc score to predict cardiovascular death and major adverse cardiovascular events (MACE) in flutter patients (pts).
Methods: Single-center retrospective study of pts submitted to CTA between 2015 and 2019, comprising two groups: I – pts with lone AFL; II – patients with AFL and after CTA documented AF. Clinical records were analyzed to determine the occurrence of MACE during the long-term follow up, defined as death (of cardiovascular or unknown cause), stroke, clinically relevant bleed or hospitalization due to heart failure or arrhythmic events. CHA_2DS_2VASc score was categorized into 3 groups: 0-1; 2-3; > 4. Kaplan Meier survival curves were used to estimate the risk of events and the groups were compared using uni- and multivariate Cox regression analyses, adjusted to the long-term treatment with anticoagulation.
Results: A total of 476 pts (66 ± 12 years, 80% males), underwent CTA: group I – 284 pts (60%), II – 192 pts (40%). Baseline characteristics were similar between groups, except for age, with group I pts being older (68 ± 12, 64 ± 11, p < 0.01). The mean baseline CHA_2DS_2VASc was 2.3 ± 1.5 and the median post-CTA follow-up was 2.8 year. CHA_2DS_2VASc score was identified as strong predictor of MACE after CTA, with the risk of events being twice higher in pts with a 2-3 score (HR: 2.11 95%CI 1.09-4.12, p = 0.027) and four times

increased in these with a score ≥ 4 (HR: 4.45 95%CI 2.24-8.84, p < 0.001). CHA_2DS_2VASc score was an independent predictor of cardiovascular death (HR: 1.49 95%CI 1.09-1.79, p = 0.08) and was a predictor of MACE even after adjustment for the diagnose of prior AF (HR 1.88, 95%CI 1.094-3.249, p = 0.022) or persistence an oral anticoagulation during the long term. CHA_2DS_2VASc score remained as a significant predictor (HR 1.36, 95%CI 0.16-0.77, p < 0.009), even after adjustment for the presence of concomitant AF on long-term persistence of oral anticoagulation after CTA (HR 0.35, 95% IC 0.16-0.77, p < 0.009). Of note, the stroke was component of the composite endpoint that contributed the most for the prognostic impact of the CHA_2DS_2VASc score (HR 1.72, 95%CI 1.24-2.40, p = 0.001).





Conclusions: In our population CHA_2DS_2VASc score was able to predict MACE events and stroke in patients with isolated atrial flutter. This suggests that in the future CHA_2DS_2VASc score could be applied to establish embolic risk in atrial flutter.

PO 77. THE IMPACT OF GLOMERULAR FILTRATION RATE IN PATIENTS WITH HEART FAILURE AND CARDIOVASCULAR IMPLANTABLE ELECTRONIC DEVICES

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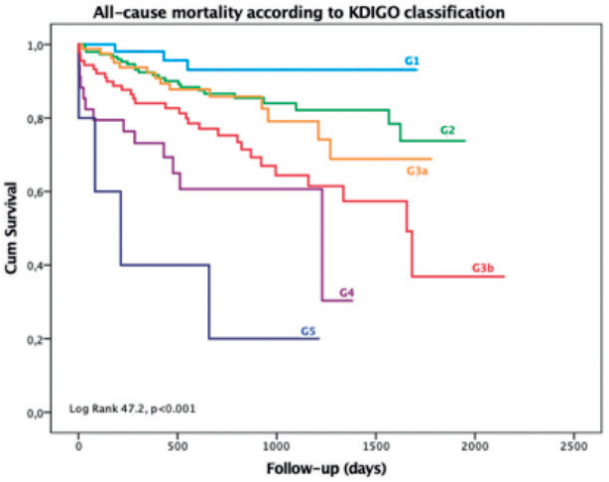
Introduction: Heart Failure (HF) and chronic kidney disease (CKD) are both epidemic, frequently simultaneous and share well known risk factors. According to HF guidelines Cardiovascular Implantable Electronic Devices (CIED) can improve quality of life and reduce mortality in selected populations. KDIGO consensus, based on two meta-analyses, states that cardiac resynchronization therapy (CRT) or implantable cardiac defibrillator (ICD) benefit is only lost below stage 4 of CKD. However, little is known about the prognostic impact of glomerular filtration rate (GFR) across other stages of CKD of HF patients submitted to CIED implants.

Objectives: To evaluate the impact of CKD in all-cause mortality in HF patients who implanted a CIED.

Methods: Prospective single-center study of patients who implanted CRT or ICD between 2015 and 2019. Clinical characteristics were evaluated at baseline and mortality was assessed using the national registry. CKD was evaluated according to the GFR by KDIGO classification. We performed univariate and multivariate analysis to compare clinical characteristics of patients who died and who survived using the Cox regression and Kaplan-Meier methods. For the predictor GFR levels, and according to the KDIGO classification, we assessed the best cut-off value for mortality using the area under the ROC curve (AUC) method.

Results: From 2015-2019, 974 devices were implanted, 414 ICDs and 560 CRTs (23.3% female, 67.6 ± 12.1, follow-up duration 26.4 ± 16.5 months). A total of 161 patients (16.5%) died during follow-up. GFR at the time of device implant was significantly lower in patients who died compared to those who survived (49.7 vs 67.3 ml/min/1.73 m^2, p < 0.001). When evaluating predictors for all-cause mortality by multivariate analysis, GFR at the time of device implant was an independent predictor of mortality, even when adjusted for age, gender, arterial hypertension and diabetes (HR 1.12; 95%CI 1.04-1.16, p < 0.001). The best GFR cut-off value to predict mortality with a 69% sensitivity and 65% specificity was 75 ml/min/1.73 m^2 (AUC 0.70). The risk of death significantly increases along GFR< 90 ml/min/1.73 m^2, with a 2.7-fold higher risk of death for stage 3a (HR 2.7 95%CI 1.15-6.52, p = 0.02), 5.5 for stage 3b (HR 5.51 95%CI 2.45-12.4, p < 0.001), 9.5 for stage 4 (HR 9.54 95%CI 3.95-23.06, p < 0.001) and 14.7-fold higher risk of death for stage 5 (HR 14.74 95%CI 4.94-43.99, p < 0.001).



Conclusions: In our cohort of HF patients who underwent CIED implant, glomerular filtration rate was an independent predictor for all-cause mortality, with the increased risk of death starting in stage 3a and reaching a dramatic 14.7- fold higher risk of death for stage 5 patients. CKD should not therefore postpone CIED implant and renal function should be optimized before implant to prevent increased mortality.

PO 78. RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY: WHAT ABOUT THE NON-RESPONDERS?

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Introduction: Cardiac resynchronization therapy (CRT) response is strongly associated with clinical outcomes and long-term prognosis in Heart Failure (HF) patients. In CRT non-responder patients, studies on clinical outcomes are lacking.
Objectives: We ought to compare CRT responders and non-responder defined by echocardiographic criteria and to access the impact of clinical criteria in the non-responder patients.
Methods: We retrospectively enrolled 83 consecutive HF patients with implantable CRT (mean age 70.7 ± 10.8 years; males 66.3%; mean follow-up of 63.39 ± 94.97 months). Echocardiographic response was defined as an increase in left ventricular ejection fraction (LVEF) ≥ 15% and clinical response as improvement in New York Heart Association functional class (NYHA) ≥ 1, both 6 months after CRT implantation. Patients were evaluated through echocardiographic and clinical parameters and divided into CRT echocardiographic non-responders (Group 1) and CRT echocardiographic responders (Group 2).
Results: Seventy (84.3%) patients had CRT-defibrillator (CRT-D) and 13 (15.7%) CRT-pacemaker (CRT-P). Medium LVEF was 30.38 ± 7.69%, 22 (26.5%) patients were in NYHA III-IV and in 36.1% the aetiology was ischemic. HF hospitalizations and related admissions to emergency department (ED) occurred in 19.28% and composite outcome of HF hospitalizations, HF related admissions to the ED and death by all causes in 31.2% of patients. In total 10 (12.0%) patients died, 2 (2.4%) from sudden cardiac death and 5 (6.0%) from non-sudden cardiovascular death. There were 44 (53.0%) echocardiographic non-responders to CRT (group 1). Dyslipidemia (p = 0.033) and obstructive sleep apnea (p = 0.044) were more prevalent in group 1. There was no difference in age, gender, previous LVEF and ischemic aetiology between groups. CRT non-responders had more HF hospitalizations, HF related admissions to the ED and death by all causes (p = 0.010) and absence of NYHA improvement and worst NYHA after CRT were also associated with the composite outcome (hazard ratio [HR]: 3.23; confidence interval [CI] 0.839-12.445; p = 0.045 and p = 0.013 respectively).
Conclusions: Although echocardiographic CRT non-responders had worse outcome, the achievement of positive clinical criteria response, may be associated with better prognosis.

PO 79. PORTUGUESE INITIAL EXPERIENCE OF ATRIAL FIBRILLATION ABLATION USING LASER BALLOON

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Introduction: Durable isolation of the pulmonary veins (PVs) remains the cornerstone of atrial fibrillation (AF) ablation. Endoscopic laser balloon ablation (ELBA) has been proven to be safe and effective as a treatment for AF. The acute PV reconnection rate is significantly less after ELBA than after radiofrequency and has high levels of durable PVI. This is the report of the initial Portuguese experience with the ELBA in terms of procedural characteristics.
Methods: Twelve patients (eight male, age 62 ± 11 years) with paroxysmal and persistent drug-refractory AF underwent ELBA PVI in our center, between September and December 2020. Two patients had past history of PVI procedure.
Results: Double transeptal puncture was performed in all cases. We used a circular catheter to confirm PV bidirectional block and Heart Light X3 system (CardioFocus Inc.) to ablate. The laser beam was guide by direct visualization of the PVI ostia using an endoscopy catheter inside the balloon. An esophageal temperature probe was used in all cases. Mean procedure time was 118 min and mean fluoroscopy time was 20 min. 96% of the PV were successfully isolated with the ELBA. No acute reconnection was reported. One procedure was complicated by a temporary phrenic nerve palsy. No other acute complications occurred.
Conclusions: PVI with ELBA was associated with a low risk of complications and a high rate of acute success. Catheter manipulation is straightforward with a fast-learning curve.

PO 80. PVI ONLY VERSUS PVI WITH COMPLEMENTING STRATEGIES - LESS IS MORE

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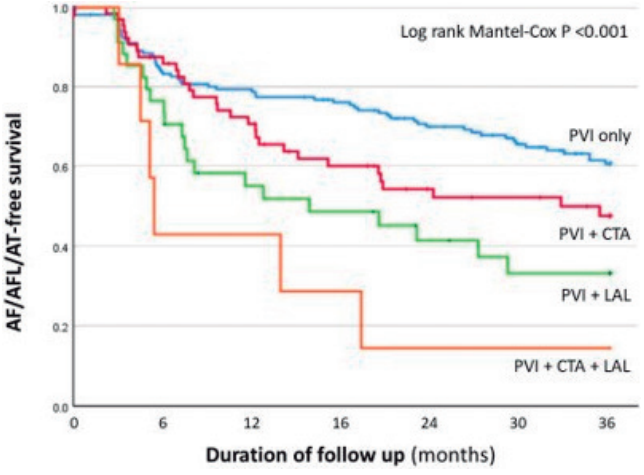
Introduction: The cornerstone of atrial fibrillation (AF) catheter ablation (CA) is the complete pulmonary veins isolation (PVI), applying circular lesions around their antrum. Particularly in persistent and long-standing persistent AF, more extensive ablation has been advocated, which may include empirical additional linear lesions in the left atrium (LAL). Moreover, cavo-tricuspid isthmus ablation (CTA) may be performed even in the absence of previous atrial flutter (AFL). However, additional benefit versus PVI alone, justifying its use during the first procedure, is yet to be confirmed.
Objectives: To compare arrhythmia-free survival between PVI alone versus PVI complemented with LAL and/or CTA.
Methods: This was a single-center prospective study of patients submitted to CA between 2004 and 2020. We included all patients with AF who were submitted to a first point-by-point CA, with or without LAL or CTA. We excluded all patients that presented a history of atypical flutter. Patients were monitored with Holter/event monitors periodically performed after ablation at 6 and 12 months and then annually until completing 5 years of follow-up. Our primary endpoint was arrhythmia-free survival, defined as the absence of documentation of more than 30 seconds of AF, flutter or atrial tachycardia during ambulatory monitoring. Cox regression and Kaplan-Meier survival were used to compare the success of ablation as a function of the clinical type of AF.
Results: A total of 293 patients were included, submitted to CA between 2004 and 2018. In this cohort, there were 64.5% males (n = 189) and the mean age was 58 ± 13 years-old. The indications for CA were distributed as follows: paroxysmal AF in 60.1% (n = 176), persistent in 28.3% (n = 83) and long-standing persistent in 11.6% (n = 34). In addition, 38.8% (n = 106) of the patients had a previous history of typical atrial flutter. CA by PVI was performed in all patients, and it was complemented with LAL in 47 (16%) patients and with CTA in 83 (28.3%). The 12 and 36-months CA success rate were 70.8% and 52.9%, and there were significant differences depending on the ablation strategy. The 36-months success rate 60.6% in patients submitted to PVI only strategy and 40.7% when PVI and CTA were performed (non-significant difference, p = 0.078). However, the risk of AF recurrence was 2 times superior in patients submitted to PVI and LAL strategy (HR: 2.27; IC95% 1.38-3.75; p = 0.001) and 4 times superior in those with a strategy with PVI+CTA+LAL (HR: 4.17; IC95% 1.79-9.72; p = 0.001), when compared to the PVI only group (Figure).



Conclusions: Treating AF with CA therapy using PVI alone was superior to a strategy with combined LAL and to CTA and LAL. A LAL strategy seemed to adversely affect the long-term success rate.

PO 81. RE-EVALUATION OF RESPONSE TO CRT: LONG-TERM IMPACT OF ECHOCARDIOGRAPHIC NON-PROGRESSION

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Background and purpose: As heart failure (HF) is a progressive disease, there has been a raising idea that considering the absence of echocardiographic improvement as non-response to cardiac resynchronization therapy (CRT) may not be appropriate. In fact, in some classical echocardiographic non-responders, CRT might have prevented HF deterioration. Our aim was to compare the composite outcome of death and re-admissions due to HF according to a new classification of CRT response: responders, non-progressors and progressors.
Methods: We included 144 consecutive patients with HF, left ventricle (LV) ejection fraction < 40% and QRS duration > 120mseg submitted to CRT implantation. Patients were divided into 3 groups according to the variation of LV end-systolic volume (LVESV) at 6-month: ≥ 15% reduction in LVESV - responders (R); 0-15% reduction in LVESV – non-progressors (NPr); increase in LVESV – progressors (Pr). A long-term follow-up (4.9 ± 2.9 years) was performed targeting mortality and re-admissions due to HF.
Results: In our population, 78 patients (54.2%) were classified as R, 21 (14.5%) as NPr and 45 (31.3%) as Pr. Baseline comparison between groups is presented in table 1. Compared with R, N-Pr had ischemic aetiology more frequently. The prescription of digoxin was more common in Pr. The Kaplan-Meier curves (Figure) demonstrate that the composite outcome of death and re-admission due to HF had a lower incidence in R, but was similar between N-Pr and Pr. After adjustment of possible confounders (ischemic aetiology and digoxin use), the type of response to CRT remained as the only predictor of outcomes (OR 0.61; CI 0.41-0.90).
Conclusions: In our population, patients without progression of HF had a similarly negative prognosis to the ones that deteriorated. Hence, positive LV remodelling, and not only stabilization, seems to be necessary to improve long-term prognosis.

PO 82. PROGNOSTIC ROLE OF NON-SUSTAINED VENTRICULAR TACHYCARDIA IN NONISCHEMIC CARDIOMYOPATHY

M. Inês Barradas, Fabiana Duarte, Luís Oliveira, Cátia Serena, António Fontes, André Monteiro, Carina Machado, Raquel Dourado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

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Introduction: Assymptomatic non-sustained ventricular tachycardia (NSVT) is a common finding in Heart Failure (HF) patients with cardiac implantable electronic devices (CIEDs). In ischemic cardiomyopathy (ICM) NSVT has a well-known prognosis impact but, in nonischemic cardiomyopathy (NICM) its clinical importance and prognosis impact is less well stablished.
Objectives: To determine the prognostic impact of NSVT detection in nonischemic cardiomyopathy patients.
Methods: We retrospectively enrolled 70 consecutive NICM patients with systolic left ventricle dysfunction and CIEDs (biventricular pacemakers with or without cardiac defibrillators). Patients were evaluated through CIEDs interrogation and clinical evaluations and divided into NSVT positive (Group 1) and negative groups (Group 2). Mean follow-up period was 59.3 ± 44.1 months.
Results: Mean age was 68.9 ± 13.1 years and 57.1% were males 57.1%. In 64.3% of the patients the etiology was idiopathic, 17.1% alcoholic cardiomyopathy, 4.3% familial dilated cardiomyopathy and 2.9% valvular. The two groups were well matched with no significant difference with regard to age, gender, comorbidities, aetiology of HF and NYHA class and left ventricular ejection fraction (LVEF). In total 8 (11.4%) patients died, 2 (2.9%) from sudden cardiac death and 5 (7.1%) from cardiovascular death. NSVT was associated with sustained ventricular tachycardia (VT) (hazard ratio [HR] 20.235; 95% confidence interval [CI]: 2.349-174.301; p = 0.001), ventricular fibrillation (HR: 0.360; 95%CI: 0.213-0.607; p = 0.026) and CIEDs treatments (HR: 5.295, CI 1.432-19.569; p = 0.012). NSVT was associated with composite outcome of VT, VF, HF re-admissions and related admissions to emergency department (ED) and death by all causes (HR: 3.252; 95%CI: 1.182-8.948; p = 0.020).
Conclusions: NSVT was significantly associated with adverse outcome, arrhythmic events and CIEDs treatments in NICM, which enhances the potential benefits of ICD in these patients and could be used as a potentially predictor of arrhythmic events.

PO 83. EARLY DISCHARGE AFTER CRYOABLATION PROCEDURE: IS IT SAFE?

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Introduction: Discharge after overnight hospital stay is the standard procedure in patients submitted to elective atrial fibrillation (AF) ablation. Taking into consideration the low rate of cryoablation procedure complications could the same day discharge be an option?
Objectives: To access the safety of same day discharge of patients submitted to AF cryoablation.
Methods: Single-center retrospective study of consecutive pts admitted to elective AF cryoablation in a tertiary center between February 2017 and November 2020. Patients were divided into two groups: same day discharge and next day discharge. Only patients submitted to ablation until 4 p.m.

	Pr (n=45)	NPr (n=21)	R (n=78)	Pr vs NPr (p)	Pr vs R (p)	NPr vs R (p)
Age, y	60.2±10.7	57.7±11.7	61.2±11.0	ns	ns	ns
Male sex, %	73.3	76.2	61.5	ns	ns	ns
Ischemic etiology, %	33.3	52.4	28.2	ns	ns	0.04
CRT-D, %	80.0	85.7	79.5	ns	ns	ns
Atrial fibrillation, %	68.9	90.5	75.6	ns	ns	ns
Diabetes, %	25.0	14.3	24.7	ns	ns	ns
Arterial hypertension, %	48.4	61.5	46.2	ns	ns	ns
Chronic kidney disease, %	20.8	41.7	24.2	ns	ns	ns
Beta-blocker, %	91.1	84.2	88.0	ns	ns	ns
Angiotensin-converting enzyme inhibitors/ angiotensin receptor blockers, %	95.6	94.7	93.3	ns	ns	ns
Aldosterone receptor antagonist, %	71.1	78.9	77.3	ns	ns	ns
Digoxin, %	60.0	31.6	37.3	0.04	0.02	ns
Basal LVEF, %	25±7	24±6	24±7	ns	ns	ns
Basal LVESV, ml	186±87	217±115	188±78	ns	ns	ns
Basal LVEDV, ml	247±104	280±128	244±89	ns	ns	ns
6-month LVEF, %	24±7	28±7	39±11	0.04	<0.01	<0.01
6-month LVESV, ml	221±94	201±104	104±52	ns	<0.01	<0.01
6-month LVEDV, ml	288±113	278±127	168±65	ns	<0.01	<0.01
QRS duration, mseg	140±29	143±32	151±37	ns	ns	ns

Table 1: comparison between groups

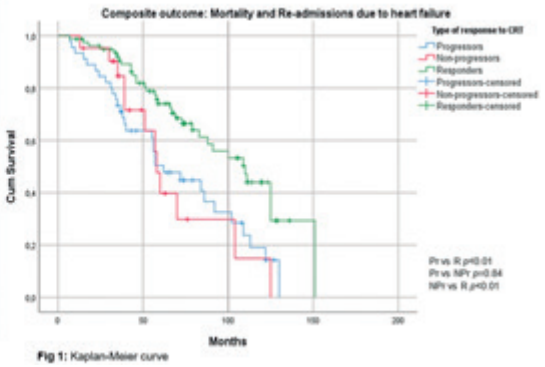

Fig 1: Kaplan-Meier curve

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were included. Complication rates were obtained up to six months after the procedure. Complications were defined as death, pericardial tamponade, hematoma requiring evaluation and/or intervention, major bleeding requiring transfusion, hospital admission related to the procedure.
Results: One hundred fifty-four pts were included, with a mean age of 61 ± 10.9 years, 66.2% were males, 18.2% with diabetes, 65.6% with dyslipidemia, 77.9% with hypertension, 10.4% with chronic kidney disease KDIGO stage 3 or more. Median follow-up of 436 (IQ 178-729) days. Most of the pts had paroxysmal (73.4%) and persistent short duration AF (23.4%). Sixty-two pts (40.3%) were early discharged and there were no differences between the two groups regarding epidemiological and clinical characteristics (p = NS). A very low rate of complications in both groups was observed, occurring in 6.5% of pts with early discharge and in 8.7% of pts in overnight stay, without statistical significance between the two groups (p = 0.61). The most frequent complications were local hematoma (5 pts, 2 in early discharged group), pericardial effusion (3 pts, all in overnight stay), femoral pseudo-aneurism (2 pts, 1 in each group) and arteriovenous fistula (1 pt in overnight stay group). The type of complications did not differ between the two groups (p = 0.51). Two pts died during the follow up, unrelated with the procedure. In addition, no difference in success rate and arrhythmic recurrence was observed between the two groups. (p = NS).
Conclusions: Our study suggests that is safe to early discharge pts submitted to AF ablation, reducing the hospital stay length in selected pts. Larger studies are needed to confirm this data before routine implementation of this strategy.

PO 84. QRS NARROWING PREDICTS LEFT VENTRICULAR REVERSE REMODELLING AFTER RESYNCHRONIZATION THERAPY IN PATIENTS WITH END-STAGE HEART FAILURE

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Introduction: Cardiac resynchronization therapy (CRT) is an established treatment for heart failure (HF) patients, however one-third of the patients fail to benefit from CRT. The relationship between the QRS duration, severity of mechanical dyssynchrony and efficacy of CRT is not completely understood. We determined if QRS duration shortening after CRT implantation was predictive of left ventricular reverse remodelling.
Methods: We retrospectively enrolled 227 patients undergoing CRT implantation between 2013 and 2020 according to the *guidelines*. 88 patients were included in our analysis, from whom all data were available. Clinical, electrocardiographic and echocardiographic parameters were evaluated at baseline and after 6 months of CRT implantation. Response to CRT was defined as a reduction in left ventricular end-diastolic volume (LVEDV) > 15%. Linear regression models were used.
Results: 88 patients were included (mean age 69 ± 10 years, 62.5% males, 36.4% ischemic etiology). Baseline left ventricular ejection fraction (LVEF) was 27.5 ± 5.8% and LVEDV was 181 ± 69 ml. After 6 months of CRT, 52 patients (59.1%) were considered responders. Baseline LVEDV was superior in responders when compared with non responders (199 ± 85 ml vs 168 ± 53 ml, p = 0.038). No significant differences were noted in male gender (p = 0.823), ischemic cardiomyopathy (p = 0.065), LVEF (p = 0.853), atrial fibrillation (p = 0.390), left bundle branch block (p = 0.950) or biventricular pacing (p = 0.154) between them. QRS duration at baseline was similar between responders and non-responders (165 ± 17 ms vs 163 ± 17 ms, p = 0.620). After 6 months of CRT, the reduction of QRS duration in responders was significantly higher than non-responders (p < 0.001). QRS duration was reduced from 165 ± 17 ms to 136 ± 15 ms in responders *vs* 163 ± 17 ms to 160 ± 17 ms in non-responders, (p < 0.001). The change in QRS duration positively correlated with the change in LVEDV (R = 0. 654; p < 0.001). Multi-linear regression analysis suggested that QRS duration shortening had a significant effect on LVEDV (y = 14.375 + 1.354 X, R^2 0.337, p < 0.001)
Conclusions: QRS duration shortening after CRT implantation was predictive of LV reverse remodelling in end-stage heart failure patients. Further prospective studies should be conducted to assess the prognostic value of QRS narrowing in response to CRT.

PO 85. NO NEED FOR COLD FEET – EFFICACY OF CRYOABLATION VERSUS OTHER ABLATION TECHNIQUES

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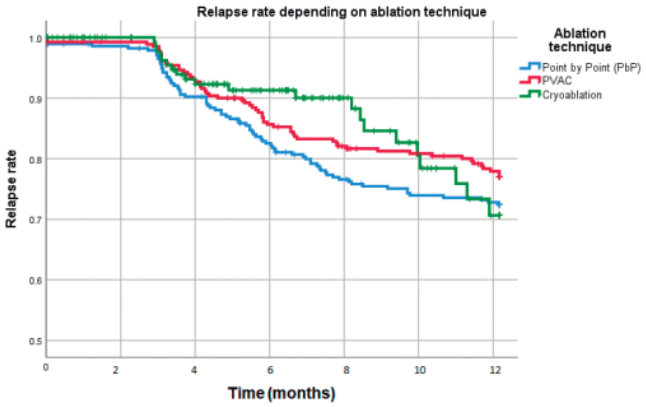
Introduction: Atrial fibrillation (AF) is increasing in prevalence, alongside the number of AF ablation procedures. Recently, one-shot techniques for AF ablation, such as cryoablation, have proved to perform pulmonary vein isolation (PVI) faster than the traditional point-to-point (PtP) ablation with irrigated catheter and 3D electroanatomic mapping. However, data on the efficacy and safety profiles of cryoablation is still lacking.
Objectives: To evaluate the efficacy and safety profile of cryoablation and compare it with other AF ablation techniques, namely PVAC and PtP.
Methods: Single centre study of AF patients (pts) refractory to antiarrhythmic therapy who performed 1st AF ablation procedure. The ablation strategy consisted of PVI, either by cryoablation, PbP or PVAC, complemented with ablation of the cavo-tricuspid isthmus in patients with history of concomitant flutter. Pts were monitored with Holter/7-day event loop recorder (3, 6, 12 months and annually up to 5 years). Success was assessed from the 90th day after ablation, with the absence of recurrences of any sustained atrial arrhythmias (> 30 sec). Cox regression and Kaplan-Meier survival were used to compare the success of ablation.
Results: We compared 319 pts submitted to PtP ablation (35.4% female, 58.03 ± 9 years old, 34.2% paroxysmal AF), 310 patients who underwent PVAC ablation (30.0% female, 58.83 ± 8 years old, 35.3% paroxysmal AF) and 232 pts submitted to cryoablation (31.9% female, 58.57 ± 11 years old, paroxysmal AF). In the PVAC group there was a higher prevalence of structural cardiopathy (p = 0.013), dyslipidaemia (p = 0.021) whereas hypertension was more prevalent in the cryoablation group (p = 0.013). There were no other significant differences among these groups. There were no differences in the rate of supraventricular tachycardia (SVT) relapse at 3º year, when comparing the three different techniques (p = 0.313). However we found significant differences (p = 0.018) when analysing the rate of post-procedure complications in each technique: 4.1% (n = 12) on the PVAC group, 9.9% on PtP group (n = 30) and 5.9% (n = 12) on the cryoablation group. Cardiac tamponade was the most frequent complication following PtP procedure (3.4%, n = 11) in comparison to only one event in cryoablation (0.4%, n = 1). With regard to the types of AF, we noted better results with cryoablation in the paroxysmal AF group (p = 0.039).



Conclusions: Cryoablation has demonstrated to be a safe and effective procedure, with similar relapse rates at 3 years as the other techniques.

Cryoablation can represent an added value in AF ablation with a better safety profile when comparing to the classical PtP ablation technique.

PO 86. IMPACT OF ATRIAL FIBRILLATION AND BIVENTRICULAR PACING PERCENTAGE ON LONG-TERM OUTCOME IN PATIENTS WITH HEART FAILURE TREATED WITH CARDIAC RESYNCHRONIZATION THERAPY

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Introduction: A history of preoperative atrial fibrillation (AF) has been found to be associated with unfavorable outcomes, higher risks of non-response to cardiac resynchronization therapy (CRT) and loss of biventricular pacing (BivP). We aimed to assess the impact of AF and BivP on long-term outcomes in heart failure (HF) patients treated with CRT.
Methods: We retrospectively enrolled 227 patients undergoing CRT implantation between 2013 and 2020 according to the current *guidelines*. 118 patients were included in our analysis, from whom all data were available. Clinical, electrocardiographic and echocardiographic parameters were evaluated at baseline and 6 months after CRT. Response to CRT was defined as an increase in left ventricular ejection fraction (LVEF) > 10%. We considered an effective delivery of BivP > 98%. The primary endpoint was the composite endpoint of hospitalization due to HF or death for any cause**.**
Results: 118 patients were included (mean age 69 ± 11 years, 66.1% males, 39.8% ischemic etiology; baseline LVEF was 27.6 ± 6%). Patients were divided into AF (n = 42; 35.6%) and sinus rhythm (SR) (n = 76); 18 patients had permanent AF. AF patients had higher index left atrial volume and left ventricular mass (p < 0.001). Mean follow-up time was 43 ± 18 months. BivP percentage was significantly superior in SR than in AF patients (98.1 ± 2.1% vs 94.7 ± 4.5%, p < 0.001), with 75% of SR patients having BivP > 98% vs 30.3% of AF patients (p < 0.001). There were no differences in preoperative parameters between them. The response rate to CRT was higher in SR patients when compared to AF patients (63.2% vs 40.5%, p = 0.021). Indeed, the variation of LVEF was higher in SR patients (12 ± 10% vs 7 ± 9%, p = 0.012). During follow-up, there were significant differences between AF and SR patients in the primary endpoint (73.8% vs 42.6%, p < 0.001), and mortality for any cause (26.2% vs 9.2% p = 0.014; p < 0.001). In a multivariate logistic regression analysis pre-procedural AF and BivP were the only independent predictors of primary endpoint (HR 8.949, 95%CI 2.429 – 32.972, p = 0.001; HR 0.719, 95%CI 0.526 – 0.982, p = 0.038, respectively). Kaplan-Meier curves showed that event survival free was higher in SR patients when compared to AF (69 ± 4 vs 24 ± 3 months, p < 0.001).
Conclusions: Pre-procedural AF and BivP are independent predictors of the occurrence of a primary endpoint of hospitalization due to HF or death for any cause in HF patients submitted to CRT.

PO 87. ATRIAL FIBRILLATION ABLATION USING HIGH-DENSITY VOLTAGE MAPPING WITH A SIMPLIFIED SINGLE TRANSSEPTAL PUNCTURE APPROACH: LONG-TERM OUTCOME OF A SINGLE-CENTER EXPERIENCE

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Introduction: For atrial fibrillation (AF) ablation, two transeptal sheaths are often positioned in the left atrium. Furthermore, in recent years, high-density mapping has become often used in AF ablation.
Objectives: To assess the feasibility, safety and long-term efficacy of a simplified single-puncture technique using high-resolution mapping to guide pulmonary veins isolation (PVI) in AF ablation.
Methods: 88 consecutive AF patients (P) [58% women, age 57.8 ± 12.2 yrs, 61% paroxysmal AF, mean left ventricular ejection fraction 55%, mean left atrium volume 43 ml/m², mean CHADSVASC score 1.75] with > 1-year follow-up post-AF ablation were included. A specified protocol was applied: segmentation of the cardiac CT scan, placement of a 10-pole catheter in the coronary sinus (CS), His location, single transeptal puncture using a defectable sheath, left atrium high-density catheter voltage mapping (PentaRay, Biosense or HD Grid, Abbott). Mapping was done during sinus rhythm (paroxysmal AF) or in AF (persistent AF) with the following settings: *LAT stability: 5 ms; position stability: 5 mm; density: 1 mm; voltage scale: < 0.2 mV.* After voltage map, the high-density mapping catheter changed with the irrigated ablation catheter to perform PVI with a wide area of circumferential ablation. Remapping was performed to analyze signals, possible gaps and low-voltage areas. Ablation of gaps, followed by remap to confirm homogeneous low-voltage and PVI, was done. PVI was confirmed by bi-directional block and low voltage homogeneity of PV and antrum in all P.
Results: Mean procedure duration was 169 ± 20 min, X-ray time was 18 ± 4 min and RF time 22 ± 10 min. The average number of mapping points and acquisition times were: MAP 1-1,009 points (388-2,200), MAP 2 (90% of the P) – 1,000 points (244-2,617), and MAP 3 (29.5% of the P) - 299 points (135-1,019). There were 1 pericardial effusion, 2 temporary right phrenic palsy and 1 bradypnea during the procedure. All P were in sinus rhythm after ablation. During a mean follow-up of 24 months, 62P (70.5%) remained free from AF.
Conclusions: A simplified single-puncture approach using high-density multi-electrode mapping is a safe and accurate technique for AF ablation, with good long-term results.

PO 88. THE RESULTS OF A CARDIAC RESYNCHRONIZATION PROGRAM IN A DISTRICT HOSPITAL

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Introduction: Cardiac resynchronization therapy (CRT) devices are a cornerstone in contemporary heart failure (HF) treatment, improving morbidity and mortality outcomes in patients with symptomatic reduced ejection fraction (< 35%) and wide QRS complexes. The aim of this work is to evaluate the results of a CRT program in a district hospital. Since the definition of CRT response is widely variable according to different studies, we used three *major* categories of CRT response to evaluate our patients: Clinical (improvement in NYHA class); Assessment of reverse remodeling (improvement of left ventricular ejection fraction, proportion of super-responders, decrease of QRS duration); Outcomes assessment (HF hospitalizations and mortality).
Methods: Retrospective study based on the analysis of patients who implanted a CRT device between January 2014 and December 2019 in a district hospital. We defined non-responders as patients whose LVEF decreased after 12 months of CRT therapy and super-responders as patients whose LVEF increased over 10%. The following endpoints were evaluated after 12 months of CRT therapy: Improvement in New York Heart Association (NYHA) functional class, proportion of super-responders, responders and non-responders, variation in LVEF and QRS duration, death from cardiovascular causes and hospital admissions due to HF.
Results: During this period 88 patients implanted CRT devices, with the following baseline characteristics: mean age of 70.9 ± 9.6 years old; male predominance (70.5%); 37.5% patients with ischemic cardiomyopathy. After 12 months of CRT device implantation there was a significant recovery in LVEF (mean LVEF before CRT was 27.2 ± 6.4 and after 12 months was 38 ± 10.7, p < 0.01), with 40% super-responders and only 9.6% non-responders. We observed a NYHA class improvement after 12 months in 74.7% of our patients. QRS complex duration decreased significantly from 168 ± 21.3 ms to 148.4 ± 20 ms (p < 0.01). Cardiovascular mortality after 12 months was 6.8% and only 17.6% of our patients had one or more hospital admissions due to HF.
Conclusions: This study results confirm the benefits of introducing a program of cardiac resynchronization therapy in a district hospital (in trend with the

Table 1. Patients' demographic and clinical data

Demographic (n= 88)	
Mean Age (years) ±SD	70.9±9.6
Sex *n(%)*	
Male	62 (70.5)
Female	26 (29.5)
Clinical Characteristics of patients (n=88)	
Ischemic cardiomyopathy *n(%)*	33 (37.5)
LBBB *n(%)*	79 (89.8)
AF* *n(%)*	32 (37.2)
Characteristics of devices (n=88)	
Type of Device *n(%)*	
CRT-D	69 (78.4)
CRT-P	19(21.6)
Upgrade n(%)	10 (11.4)

AF: atrial fibrillation; LBBB: left bundle branch block; CRT: Cardiac resynchronisation therapy.

PO 88 Figure 1

Table 2. Patients' Baseline and after 12 months of CRT implementation evaluation

Variable	Before CRT device implantation	12 months after CRT device implantation	*p*-value
Mean LVEF *(%)* ± SD *	27.2±6.4	38±10.7	***p* <0,001**
Super-responders, *n (%)* *		25 (40%)	
Non-responders, *n (%)* *		6 (9.6%)	
NYHA class, *n (%)**			
NYHA I	0	24 (27.3%)	
NYHA II	26 (29.5%)	51 (58%)	
NYHA III	62 (79.5%)	4 (4.5%)	
NYHA IV	0	0	
NYHA class improvement		74,7 %	
Mean QRS duration, (ms) ± SD *	168±21.3	148.4±20	***p* <0,001**
At least 1 hospital admission due to HF*		15 (17.6%)	
Cardiovascular related mortality *n(%)*		6 (6.8%)	

LVEF: Left Ventricular Ejection Fraction; HF: Heart failure.

PO 88 Figure 2

robust scientific evidence that support the benefits of CRT therapy). Such results might encourage district hospitals to start CRT programs in order to enhance the treatment of HF.

PO 89. ALCOHOL CONSUMPTION AND ATRIAL FIBRILLATION/FLUTTER – WHAT IS THE IMPACT?

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Introduction: Alcohol binge, but also modest intake, is associated with increasing risk of atrial fibrillation (AF).
Objectives: To determine the clinical characteristics and prognosis of patients with alcohol consumption and atrial fibrillation or atrial flutter (AFL) submitted to electrical cardioversion (EC).
Methods: We conducted a retrospective study encompassing patients referred to EC due to AF or AFL in our Cardiology Department, from September 2011 to September 2020. Demographic and clinical characteristics, echocardiographic studies and follow-up were analysed. Primary endpoints were the occurrence of ischemic stroke, bleeding complications and all-cause mortality.
Results: A total of 719 patients were referred to EC during the 9-year period, with a median age of 67 years-old, and EC was successfully performed in 93.2%. In this cohort, 20.9% of patients had AFL, 57.3% had arterial hypertension, 34.6% were obese and 6.3% had sleep apnea. 62.1% had persistent AF/AFL, 19.6% presented with first diagnosed AF/AFL and 17.2% was diagnosed with paroxysmal AF/AFL. Left ventricular ejection fraction was preserved in 66.7% of patients. 89.8% were anticoagulated and, of these, 75.7% were medicated with non- vitamin K antagonist oral anticoagulants (NOAC). Ninety six patients (13.3%) mentioned regular or acute alcohol consumption, with a frank male predominance (97.9%) and a younger age (56.15 vs 68.83 years-old; $p < 0.001$). Only 34% of these patients had AF/AFL lasting less than 48 hours, with 59.4% having persistent AF/AFL. Patients with alcohol consumption had lower values of CHA2DS2-VASc (1.53 vs 2.99; $p < 0.001$) and HAS-BLED (0.4 vs 0.86; $p < 0.001$) scores, being also more frequently treated with NOAC (87.3% vs 73.5%; $p = 0.02$). They had more AF/AFL recurrences (0.94 vs 0.63; $p = 0.021$), were more submitted to additional

EC (33.3% vs 14.6%; p = 0.002) and referred to ablation procedures (23.2% vs 8.8%; p = 0.007). No statistically significant differences were found regarding the primary endpoints between the two groups.
Conclusions: Patients with AF/AFL and alcohol consumption are younger, generally male and have lower embolic and bleeding risk (according to CHA2DS2-VASc and HAS-BLED scores). Due to their higher rate of AF/AFL recurrence, they are more submitted to additional EC and referred to ablation procedures. Alcohol withdrawal is essential for the success of EC and ablation procedures in maintaining sinus rhythm.

Virtual Posters | Posters - E. Coronary Artery Disease, Acute Coronary Syndromes, Acute Cardiac Care

PO 90. EFFECT OF SEVERE ANEMIA (HEMOGLOBIN < 10G/DL) ON SHORT- AND LONG-TERM OUTCOME IN ACUTE CORONARY SYNDROME: INSIGHTS OF A TERTIARY CENTRE

Isabel Campos, Cátia Oliveira, Carla Marques Pires, Paulo Medeiros, Rui Flores, Fernando Mané, Rodrigo Silva, Carlos Braga, Catarina Vieira, Jorge Marques

Hospital de Braga.

Introduction: Although invasive strategies are the generalized approach in the management of acute coronary syndrome (ACS) pts, their benefits in pts with significant anemia are unclear, as anemia is strongly associated with increased risk of morbidity and mortality.
Objectives: To determine the incidence and the impact of severe anemia (hemoglobin < 10 g/dL) on short- and long-term outcome in pts hospitalized with acute coronary syndrome.
Methods: We analysed retrospectively 2,905 ACS pts admitted for 6 years in our coronary care unit. Pts were divided into two groups: group 1 - pts with severe anemia (hemoglobin < 10 g/dL) (n = 257, 8.8%); group 2 - pts without severe anemia (hemoglobin 10 g/dL) (n = 2,648, 91.2%). Primary endpoint was the occurrence of a composite of death and adverse cardiovascular events (stroke, reinfarction, and rehospitalization of cardiovascular etiology) at 6 months; follow-up was completed in 96% pts.
Results: The sample consisted in 2,262 (77.9%) men and 643 (22.1%) women, with mean age of 64 ± 13 years. The incidence of severe anemia was 8.8%. Group 1 pts were older (74 ± 11 vs 63 ± 13, p < 0.001), had a higher proportion of women (47.9% vs 19.6%, p < 0.001), diabetes (45.5% vs 26.1%, p < 0.001), hypertension (81.7% vs 61.5%, p < 0.001), chronic kidney disease (24.0% vs 2.8%, p < 0.001) and atrial fibrillation (8.9% vs 5.0%, p < 0.001). During hospitalization, group 1 had more heart failure (71.2% vs 24.2%, p < 0.001), angor (12.1% vs 4.6%, p < 0.001), refarction (5.1% vs 2.0%, p = 0.006), worst LVEF (53.9% vs 32%, p < 0,001), bleeding (6.1%% vs 0.3%, p < 0.001) and transfusion (20% vs 0%, p < 0.001). Group 1 had a higher proportion of NSTEMI pts (56.0% vs 47.3%, p = 0.009) as opposed to group 2 which had more STEMI (40.1% vs 47.2%, p = 0.031). During hospitalization, group 2 pts were more likely to undergo revascularization (71.7% vs 83.7%, p < 0.001) and double antiaggregation (85.2% vs 93.7%, p < 0.001). A multivariate analysis identified age [OR 1.06, 95%CI 1.04 to 1.07; p < 0.001] and feminine sex [OR 2.61, 95%CI 1.89 to 3.61; p < 0.001] as independent predictors of severe anemia during hospitalization. Patients with severe anemia had longer hospital stay (11 ± 9 days vs 6 ± 4 days; p < 0.001), and higher 6-month mortality (32.1% vs. 6.9%; p < 0.001). In multivariate analysis and after adjusting for different baseline characteristics, pts with severe anemia had higher occurrence of a composite of death and adverse cardiovascular events at 6months compared to those without severe anemia [OR 5.04, 95%CI 1.21 to 21.04; p = 0.026].
Conclusions: Severe anemia was strongly associated with increased risk of morbidity and mortality in ACS pts. However, pts with severe anemia who were double antiaggregated had no worse outcomes than those who had simple antiaggregation after 6months. Therefore, there was no significant difference regarding revascularization in these pts.

PO 91. WHAT IS THE PROGNOSIS FOR PATIENTS WHO DEVELOP NEW-ONSET ATRIAL FIBRILLATION IN THE FIRST 48 HOURS AFTER AN ACUTE CORONARY SYNDROME?

Isabel Campos, Cátia Oliveira, Paulo Medeiros, Carla Rodrigues, Rui Flores, Fernando Mané, Rodrigo Silva, Carlos Braga, Catarina Vieira, Jorge Marques

Hospital de Braga.

Introduction: Atrial fibrillation (AF) is a common complication in acute coronary syndrome (ACS). However, treating patients (pts) with new-onset AF (NOAF) after an ACS remains a challenge. Although it seems intuitive that pts who develop AF within the first 48h have increased morbidity and mortality, your prognosis is unclear because there are no robust studies in the literature to confirm this association.
Objectives: To characterize the population of pts who developed NOAF in the first 48 hours after an ACS and to compare the prognosis between these pts and pts who didn't develop AF.
Methods: 2916 ACS pts admitted consecutively in our coronary care unit during 6years were analyzed retrospectively. Of these pts, 343 (11.7%) had AF within the first 48h, of which 99 (3.4%) had pre-existing AF and 243 (8.3%) presented NOAF. Pts were divided into two groups: group 1 -ACS pts who developed NOAF in the first 48h (n = 243; 8.8%); group 2 – ACS pts who did not develop AF (n = 2,517; 91.2%). Pts with pre-existing AF were excluded (n = 156; 5.4%). Primary endpoint were the occurrence of death at 6 months; follow-up was completed in 95.8% of pts.
Results: Group 1 pts were older (72 ± 12 vs 62 ± 13, p < 0.001), with higher proportion of women (30.9% vs 20.9%, p < 0.001), hypertensive (78.5% vs 60.7%, p < 0.001), smokers (17.4% vs 32.6%, p < 0.001), previous CABG (7.9% vs 3.8%, p = 0.06) and stroke (10.7% vs 6.8%, p = 0.035). Group 1 had a higher proportion of STEMI pts (58.5% vs 46.5%, p < 0.001) and, during hospitalization, had more often respiratory infection (p < 0.001), malignant arrhythmias (p < 0.001), heart failure (p < 0.001), stroke (p = 0.001), higher values of NT-proBNP (p < 0.001) increased C-reactive protein levels (p < 0.001), leukocytes (p = 0.020), peak of TropI (p = 0.029) and creatinine (p < 0.001). On echocardiography, group1 had greater LA diameter (45 ± 6 VS 41 ± 5 mm, p < 0.001), more frequent significant mitral regurgitation (13.9% vs 2.9%, p < 0.001), worst LVEF(41 ± 10% vs 46 ± 10%, p < 0.001) and a higher value of pulmonary artery pressure (39 ± 12 vs 24 ± 10, p < 0.001). Group 1 were less likely to have undergone coronary revascularization (84% vs 74%, p = 0.005). In multivariate analysis, age≥ 75 (OR 1.05, p < 0.001), LVEF≤ 40% (OR 2.50, p < 0.001), LA diameter (OR 1.59, p = 0.027), more significant mitral regurgitation (OR 2.49, p = 0.001) and Killip class > 1 (OR 1.51, p = 0.015) remained independent predictors of NOAF. In multivariate analysis and after adjusting for different baseline characteristics, pts with NOAF have the same risk of 6-months mortality compared to those who didn't develop AF [OR 1.03, p = 0.91].
Conclusions: The incidence of NOAF was 8.8% in our population, which is similar to the literature. Age, LVEF, LA diameter, a significant mitral regurgitation and Killip class > 1 were independent predictors of NOAF after ACS. Pts with NOAF in the first 48h after an ACS had worse clinical manifestations during hospitalization but no higher 6-months mortality risk.

PO 92. EVOLUTION TRENDS IN THE MANAGEMENT AND PROGNOSIS OF CARDIOGENIC SHOCK IN PORTUGAL

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Introduction: Mortality associated with cardiogenic shock (CS) in patients (pts) with ST-elevation acute myocardial infarction (STEMI) remains high, despite the therapeutic evolution observed in the treatment of STEMI.
Objectives: To evaluate the evolution in clinical profile, therapeutic management and mortality of pts with CS after STEMI in Portugal from a period between 2010 to 2018.

Methods: We studied all pts with CS after STEMI included in a national database. We registered age, gender, cardiovascular and non-cardiovascular history, electrocardiographic presentation, rate of reperfusion, coronary anatomy and angioplasty strategy. We also evaluated the presence of the following complications: Re-Infarction, mechanical complications, high-grade atrial ventricular block (AVB), sustained ventricular tachycardia (VT), atrial fibrillation (AF), stroke, major bleeding and in-hospital mortality.
Results: During this period 815 pts were included with CS after STEMI. Most of the pts were male (nearly 63.5%) and almost half had more than 75 years-old, however no temporal trend was seen in age and gender. Simultaneously, there were no differences observed between cardiovascular risks factors or other non-cardiac comorbidities. Therapeutics changes were observed, with a reduction in the use of clopidogrel ($p < 0.001$), glycoprotein IIb/IIIa inhibitors ($p = 0.01$) and an increase use of ticagrelor ($p < 0.001$) with no differences regarding other therapeutics. Inotropes were used in 63.3% of pts with CS and among these only 4.7% with levosimendan. The rate of coronariography and angioplasty were stable during this period (78.5% and 72.1%, respectively), with no differences in the type of vessels with disease. There was an increase in the utilization of drug-eluting stents ($p < 0.001$) and a decrease in bare-metal stents ($p < 0.001$). During CS management, mechanical ventilation was used only in 23.2% and there was a decrease in the utilization of Swan-Ganz catheter ($p = 0.004$), and a decrease in the use of intra-aortic balloon pump ($p < 0.001$). Otherwise the expansion of left ventricular assist devices (LVAD) in Europe, its utilization in Portugal is very low (approximately 0.2%) with no tendency to increase. Mortality of CS after STEMI remains high (44.9%), but with a small tendency to a decrease ($p = 0.049$) over the years. We also observed a reduction in the rate of major bleeding ($p = 0.017$) and high-grade atrial ventricular block ($p < 0.001$).
Conclusions: Mortality for cardiogenic shock after STEMI remains high in Portugal, but present a slight tendency to a reduction. These temporal trends reflect guidelines recommendations in STEMI with an increase in utilization of ticagrelor, a decrease in the utilization of glycoprotein IIb/IIIa inhibitors and IABP. Inotropes remain the cornerstone in the management of CS, but we still have a poor use of LVAD in Portugal.

PO 93. COMPLETE REVASCULARIZATION IN STEMI WITH MULTIVESSEL DISEASE: HOW LATE IS TOO LATE?

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Introduction: Recent research has shown that in patients (pts) with ST-elevation myocardial infarction (STEMI) and multivessel coronary disease, revascularization of non-culprit lesions soon after primary percutaneous coronary intervention (PCI) reduces the risk of death and myocardial infarction (MI) compared with culprit-lesion-only PCI. However, in real-world practice, centres often cannot perform PCI of non-culprit lesions as early after hospital discharge as reported in these studies.
Objectives: To analyse current treatment of STEMI with multivessel disease in a district hospital and determine if there is still benefit in doing complete revascularization (CR) even when non-culprit lesion PCI is done late after hospital discharge.
Methods: We conducted a retrospective pilot study including all consecutive pts with STEMI submitted to primary PCI in a district hospital in 2018 who presented angiographically significant multivessel disease (≥ 1 non-culprit lesion with ≥ 70% stenosis) amenable to PCI. We compared outcomes (death, MI, stroke and ischaemia-driven revascularization) between 3 groups: group A – pts who underwent CR after hospital discharge; group B – those who did it during index hospital stay; group C – pts who only underwent culprit-lesion PCI. Exclusion criteria included history of coronary bypass graft, cardiogenic shock at admission, a chronic total occlusion as single non-culprit lesion and death before treatment strategy was defined.
Results: Of the 302 pts treated for STEMI in 2018, 125 had multivessel disease. Of these, 27 met exclusion criteria, resulting in a sample of 98 pts with a mean age of 66 years. Median time from symptom onset to PCI was 5 hours, with 8% of pts presenting in Killip class II-III. Group A (n = 15; 15%) underwent PCI of non-culprit lesions after a median of 86 days from primary PCI and group B (n = 60; 61%) after a median of 3 days. Group C included 18 patients (18%). An additional 5 pts had non-culprit lesions treated surgically after a median of 364 days. At a median follow-up of 2.4 years, mortality in group A did not significantly differ from group B [A = 0% (n = 0) *vs* B = 12% (n = 7); log-rank test: $p = 0.185$] but was significantly inferior to group C [C = 29% (n = 5); A *vs* C: $p = 0.037$]. MI, stroke and a composite endpoint of MI, stroke and death did not significantly differ between groups. The secondary outcome of ischaemia-driven revascularization occurred more often in group A compared with B (HR 6.68; 95%CI 1.09-41.01; $p = 0.040$).
Conclusions: This study suggests that complete revascularization in STEMI with multivessel disease even late after hospital discharge is still superior to culprit-lesion only PCI in reducing risk of death. On the other hand, this late revascularization seems to be associated with higher rates of ischaemia-induced revascularization. Further research with a larger sample will be required to confirm the results of this pilot study.

PO 94. GLYCOPROTEIN IIB-IIIA RECEPTOR INHIBITORS IN ACUTE CORONARY SYNDROME PATIENTS PRESENTING WITH CARDIOGENIC SHOCK: A NATION-WIDE REGISTRY

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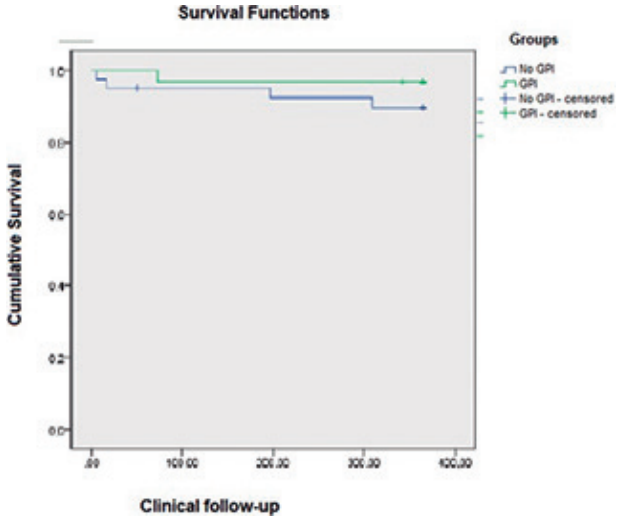
Introduction: Cardiogenic shock (CS) complicates 5-10% of the cases of myocardial infarction. In-hospital mortality still ranges from 23-44%. The use of glycoprotein IIb-IIIa (GPI) may be a valuable option in these high-risk patients given its intravenous use, high potency and rapid onset of action. Data about the benefit of GPI in these patients is rather sparse and conflicting.
Objectives: To assess the prognostic impact of the adjunctive use of GPI on in-hospital and 1-year mortality in patients with acute coronary syndrome (ACS) complicated with CS undergoing percutaneous coronary intervention (PCI).
Methods: 27,578 ACS patients included in the national registry between 2010 and 2019 were retrospectively assessed. Clinical, laboratorial and echocardiographic data were evaluated. Two percent of these patients (n = 357) were admitted in CS and were enrolled in our study. Two groups were created: Group A (patients undergoing PCI with adjunctive use of GPI) – N = 107 and Group B (patients undergoing PCI, not receiving GPI) – N = 250. The co-primary endpoints were in-hospital and 1-year mortality. Secondary endpoints were successful PCI, re-infarction, major bleeding, and aborted sudden cardiac death.



Results: Demographics and CV risk factors were similar between groups. Mean age was 68 ± 13 years, with a male predominance (68%). Supra-ST elevation ACS patients were more likely to receive GPI (95% vs 83%, $p = 0.002$). The

culprit vessel did not differ significantly, but left main occlusion was more frequent in the GPI group (15% vs 5%, p = 0.006). No differences in the antiplatelet therapy were noted. The GPI used was eptifibatide in 45%, abciximab in 41% and tirofiban in 14% of the cases. No differences between groups were noted for intra-hospital mortality - 35.5% vs 32.8% (OR 1.13, 95%CI 0.70-1.82); successful PCI - 94% vs 91% (OR 0.33, 95%CI 0.62-4.06); re-infarction - 1.9% vs 2.4% (OR 0.77, 95%CI 0.15-3.90) or major bleeding - 10.3% vs 6.4% (OR 1.68, 95%CI 0.75-3.74). Patients receiving adjunctive GPI were more likely to have an aborted sudden cardiac death - 37.4% vs 24% (OR 1.89, 95%CI 1.16-3.08). Only 70 patients had follow-up at a-year. A-year mortality was not different between groups (57% vs 43%, log rank p = 0.28).
Conclusions: In our population, the adjunctive use of GPI in the context of an ACS complicated with CS did not show benefit in short or long-term mortality. Successful PCI, re-infarction or major bleeding during the index hospitalization were also no different from patients not receiving GPI.

PO 95. YOUNG PATIENTS WITH ACS: WHO ARE THEY AND WHERE ARE THEY GOING?

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Introduction: Younger patients with acute coronary syndromes (ACS) are a particular population. Besides having a longer life expectancy, they are at an increased risk for long term cardiovascular (CV) events.
Objectives: To identify the main characteristics of young patients with ACS and to assess the predictors of worse long-term outcomes in this subset of patients.
Methods: ACS patients younger than 45 years admitted to a single coronary care unit were included (n = 74). Patients with non-obstructive coronary arteries were excluded (n = 12). Clinical, laboratorial and echocardiographic data were evaluated. The primary endpoint was a composite of all-cause mortality, reinfarction and heart failure hospitalization. Cox regression was conducted to evaluate the impact on the primary endpoint. The mean follow-up time was 65 (± 30) months.
Results: Sixty-one (82%) patients were male, with a mean age of 41 ± 2 years old. Most of them were smokers (87%) and had dyslipidaemia (70%); diabetes (22%) and hypertension (42%) were also prevalent, considering the age range. ST-elevation myocardial infarction (STEMI) was the most common presentation (67%); mean hospital stay was 4 ± 3 days. The culprit coronary vessel was the left anterior descendent in 41%; the left circumflex in 30%, the right coronary artery in 18% and the left main in 3% of the patients. Percutaneous coronary intervention was performed in 92% of the cases. Fifty-seven percent of the patients had a preserved left ventricular ejection fraction. Most patients remained Killip-Kimball class I during hospitalization (91%). Three patients received levosimendan and 1 received an intraaortic balloon-pump. One patient died during hospitalization. The composite endpoint occurred in 14 (18%) patients. Cox analysis showed that peak Troponin I (HR 1.01, 95%CI 1.003-1.01, per each unit increase) and NT-proBNP (HR 1.00, 95%CI 1.001-1.001, per each unit increase) were the only predictors of MACE. Neither clinical (age, gender, CV risk factors, left ventricular ejection fraction), nor procedural factors (culprit vessel, treatment strategy) were predictors of the composite endpoint.
Conclusions: In our cohort, young patients with ACS were mostly men with comorbidity with CV risk factors. and frequently presented with STEMI. The occurrence of long-term MACE was frequent and independently predicted by peak troponin I and NT-proBNP levels at admission.

PO 96. PREDICTIVE VALUE OF CEREBRAL NATRIURETIC PEPTIDE IN ACUTE MYOCARDIAL INFARCTION WITHOUT OBSTRUCTIVE CORONARY DISEASE

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Introduction: The brain natriuretic peptide (BNP) has a protective role on the coronary vasculature. On the other hand, vascular dysfunction is one of the main factors associated with acute myocardial infarction without obstructive coronary disease (MINOCA). Therefore, one can theorize that BNP might be involved in the pathophysiological mechanism of this disease.
Objectives: This study sought to determine whether a low BNP value is a significant predictor of MINOCA.
Methods: This was a national multicenter retrospective study of patients hospitalized for an acute myocardial infarction (AMI) between October 2010 and September 2019. Patients with previous history of heart failure, severe valvular disease, chronic kidney disease, atrial fibrillation and who didn't have a coronary angiography during hospitalization were excluded.
Results: Of a total of 4,954 patients with an AMI, 306 (6.2%) were diagnosed as MINOCA. The MINOCA group had a higher percentage of women (42.5% vs 24.6%, p < 0.001) and was more frequently hospitalized for a non-ST-segment elevation myocardial infarction (70.9% vs 39.3%, p < 0.001). Left ventricular ejection fraction was significantly higher in these patients (58 ± 13% vs 54 ± 13%, p = 0.002). MINOCA was associated with a better in-hospital prognosis: less cardiogenic shock (1.0% vs 4.0%, p = 0.008), less cardiac arrests (1.0% vs 4.8%, p = 0.002), less major bleeding events (0% vs 1.8%, p = 0.019) and lower mortality (0% vs 2.2%, p = 0.010). The BNP median was lower in patients with MINOCA (91 (38;269) pg/mL vs 141 (56;328) pg/mL, p < 0.001). The BNP cut-off, determined by ROC curve analysis, was 85.5 pg/mL. Therefore, 49.3% of the patients with MINOCA had BNP values considered low, in contrast to 35.3% of the patients with obstructive coronary disease (p < 0.001). In a multivariate regression analysis, we found that a low BNP value was a significant predictor of MINOCA (adjusted OR 2.46, 95%CI 1.87-3.23).
Conclusions: As expected, MINOCA was an entity associated with a better in-hospital prognosis when compared to AMI with obstructive coronary disease. In this study, a low BNP value was able to independently and significantly predict MINOCA.

PO 97. OUTCOME FOLLOWING LATE REPERFUSION WITH PERCUTANEOUS CORONARY INTERVENTION IN STABLE PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION PRESENTING MORE THAN 12 HOURS FROM ONSET OF SYMPTOMS IN THE CONTEMPORARY ERA

Ana Rita Moura, Bruno Castilho, Mariana Saraiva, Nuno Craveiro, Kevin Domingues, Vítor Paulo Martins, on behalf of the National Registry of Acute Coronary Syndrome of the Portuguese Society of Cardiology Investigators

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Introduction: 8-40% of patients with acute ST-elevation myocardial infarction (STEMI) present later than 12 hours after symptom onset. According to guidelines these late presenters maintain indication for primary percutaneous coronary intervention (PCI) when there are signs of ongoing ischemia. However, it prevails uncertainty in relation to the best approach in stable late presenters.
Objectives: Describe the profile of stable late STEMI presenters and evaluate the trends of reperfusion decision in the Portuguese reality; compare early term outcomes between patients submitted to emergent primary PCI and those in which it was preferred an initial conservative approach.
Methods: Retrospective analysis of patients with STEMI presenting ≥ 12-48h hours after the beginning of the symptoms between October 2010 and December 2019 without evidence of ongoing ischemia, inserted in a national registry of acute coronary syndromes. Patients were dichotomized and compared according to whether or not were submitted to emergent reperfusion based on primary PCI.
Results: 274 patients were included (2.3% of all STEMI), predominantly men (67.5%), with a mean age of 68 ± 13 years old. Emergent PCI was performed in a minority (15.7%; n = 43); even so, coronariography ended up being executed in 61.3% of the admissions, with angioplasty performed in 47.1% of the cases. Right coronary artery was the most common intervened vessel (50.8%). Inotropes were necessary in 4.6% of the patients, with no reports of ventricular assistance device use. Mean ejection fraction was 51 ± 12% with no differences between groups. Patients submitted to emergent PCI

(15.7%) had a lower prevalence of atrial fibrillation (0 vs. 9.3%, p = 0.04) and had more commonly electrocardiographic criteria for anterior STEMI (64.3% vs. 41.4%, p = 0.006). Nitrates were significantly less prescribed at discharge in this subgroup (4.9% vs. 26.8%; p = 0.002). Apart from aborted cardiac arrest, that was more prevalent in patients submitted to emergent reperfusion (4.8% vs. 0.9%, p = 0.12), it was observed a tendency toward a lower percentage in this subgroup in all other early hard clinical outcomes such as re-infarction (0 vs. 0.4%, p = 1.00), mechanical complications (0 vs. 2.2%; p = 1.00), sustained ventricular tachycardia (0 vs. 0.9%, p = 1.00) and in-hospital death (0% vs. 4.4%, p = 0.37). However, none of the differences have reached statistical significance.
Conclusions: The study shows that, in the Portuguese reality, emergent reperfusion is adopted in only a minority of late stable STEMI patients, with a clear tendency to perform it more frequently in subacute anterior STEMI. Emergent PCI strategy did not show a clear benefit in terms of left ventricular function, risk of re-infarction, arrhythmic and mechanical complications, and in-hospital death. On the other hand, there was apparently a significant advantage of this strategy in ischemic symptom control.

PO 98. SPONTANEOUS CORONARY ARTERY DISSECTION - TEN YEARS EXPERIENCE OF A TERTIARY CENTER

Tânia Proença, Miguel Martins Carvalho, Ricardo Alves Pinto, Sofia Torres, Carlos Xavier Resende, Pedro Diogo Grilo, Filipa Amador, Catarina Costa, João Calvão, Marta Tavares Silva, Roberto Pinto, Paula Dias, Filipe Macedo

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Introduction: Spontaneous coronary artery dissection (SCAD) represents 1 to 4% of all acute coronary syndromes (ACS) and is an important cause of myocardial infarction particularly among young women and individuals with few cardiovascular risk factors. Due to its misdiagnosis and underdiagnosis, literature concerning to the best management is scarce.
Objectives: To characterize clinical background, therapeutic management and clinical outcomes in a SCAD population.
Methods: We retrospectively analyzed all patients diagnosed with SCAD at a tertiary center from August 2009 to December 2019. Clinical, angiographic, and imagological data were collected at admission, and a median follow-up of 49 months. All coronary angiographies were reviewed and Saw angiographic SCAD classification was applied.
Results: 35 patients were included, 94% were female (45% post-menopausal and one patient was pregnant), with a mean age of 52 ± 11 years. Concerning cardiovascular risk factors, 49% had hypertension, 40% had dyslipidemia, 6% had diabetes and 31% were smokers or previous smokers. Trigger was only detected in 6% of patients and associated conditions in 29% (3 cases of inflammatory systemic disease, 3 of migraine, 2 of autoimmune disease and 2 in hormonal therapy). 37% presented with ST-elevation myocardial infarction (STEMI), 60% with non-ST-elevation acute coronary syndrome (NST-ACS) and one patient were diagnosed incidentally. The most affected vessel was anterior descendent artery (65%) followed by circumflex artery (23%); the majority of cases affected mid to distal segments (89%), 2 cases affected left main coronary artery, and 11% of dissections were multivessel; type 2 was the most prevalent dissection (60%), and no type 3 was detected; only 4 patients were submitted to percutaneous intervention. Overall, 24% of patients had recurrence of pain, 35% repeat coronary angiography during hospitalization (54% with progression of dissection). At discharge, 89% of patients were medicated with double anti-platelet therapy, 77% with statin, 77% with beta-blocker and 57% with inhibitors of renin-angiotensin system. A stress test was performed in 63% of patients in the follow up, with 91% being negative; 23% repeated coronary angiography (both control or suspected ischaemic event), with 75% showing imagological improvement. Concerning to recurrence, 20% had chest pain and 17% had a new ischaemic event (all NST-ACS). No patient died during the median follow-up of 49 months.
Conclusions: In our study, as describe in the literature, left anterior descending artery and mid-distal segments were the most affected, and type 2 dissection was the most prevalent. Conservative approach was the preferred therapeutic method; however, SCAD remains not only a diagnostic but also a therapeutic challenge and frequently patients are treated as those with atherosclerotic ACS.

PO 99. WHAT ARE THE PREDICTORS OF HEART FAILURE IN PATIENTS ADMITTED WITH ACUTE CORONARY SYNDROME? - DATA FROM A LARGE NATIONAL REGISTRY

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Introduction: Heart failure (HF) is a serious and frequent complication of acute myocardial infarction with important impact in outcome. Early treatment according to contemporaneous guidelines is essential to avoid that complication. Previous ischemic heart disease and HF are important predictors. Our objective was to identify additional predictors of HF in patients admitted with acute coronary syndrome (ACS).
Methods: Analysis of all consecutive patients prospectively included in a large national registry of ACS. Patients with a previous history of ACS, myocardial revascularization or heart failure were excluded from the analysis. The group that developed HF was compared with the group without HF and multivariate logistic regression analysis was performed to identify independent predictors of HF during hospitalization (Killip class > 1).
Results: A total of 19,248 patients were included, and 17.3% developed HF during hospitalization. Patients with HF were older, less often males and smokers, and more often with hypertension and diabetes, as well as other comorbidities (p < 0.001). ST elevation myocardial infarction (STEMI), atrial fibrillation, mechanical and electrical complications are also more frequent. Patients that developed HF have higher in-hospital mortality (0.9% vs. 12.1%). Independent predictors of HF are female gender (OR 1.64, 95%CI 1.15-2.33), age (1.42, 1.25-1.62, per 10-year increase) diabetes (1.97, 1.44-2.69), atrial fibrillation (2.65.1.66-4.23), STEMI (2.30, 1.70-3.10), multivessel disease (1.52, 1.13-2.05) and initial admission in a hospital without catheterization laboratory as a protective factor (0.71, 0.52-0.96). In STEMI patients, anterior location is also an independent predictor.
Conclusions: In patients admitted with a first ACS and without previous ischemic heart disease or heart failure, female gender, increasing age, diabetes, atrial fibrillation, STEMI and multivessel disease are the main predictors of worst outcome and these patients should be treated more aggressively to avoid HF development.

PO 100. DE NOVO ATRIAL FIBRILLATION IN ACUTE CORONARY SYNDROMES: IS CHAD2S2VASC USEFUL?

Mariana da Silva Santos, Hélder Santos, Inês Almeida, Hugo Miranda, Catarina Sá, Joana Chin, Samuel Almeida, Catarina Sousa, João Tavares, Luís Santos, Maria Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo.

Introduction: Acute Coronary Syndromes (ACS) are a common pathology with important morbidity and mortality rates. There were proposed several scores trying to identify patients (pts) at higher risk of worse prognosis in short and long-term outcomes. CHA2DS2-VASc score (CVS) was validated as a tool to estimate the risk of stroke in pts with atrial fibrillation (AF), helping deciding when to initiate anticoagulation therapy in AF pts.
Objectives: To validate CVS as a prognosis score in de novo AF in ACS setting.
Methods: Multicenter retrospective study, based on the Portuguese Registry of ACS between 1/10/2010-4/09/2019. Pts with de novo AF in the setting of ACS were selected. The CVS was tested as a predictor of de novo AF. According with the CVS punctuation (0, 1 and ≥ 2), Kaplan-Meier analysis was performed to establish the survival rates and cardiovascular re-admission (CRA) at one year follow-up.
Results: 25727 pts had ACS, 1067 (2.6%) presented de novo atrial fibrillation (AF). Between the de novo AF pts, 64.2% were male (vs 72.7% in pts who didn't develop de novo AF, p < 0.001) and average age was 75 ± 12 (vs 66 ± 14, p < 0.001); regarding past history, 75.6% (vs 70.4%, p < 0.001) had arterial hypertension, 34.6% (vs 31.4%, p = 0.029) were diabetic, 11.5% (vs 5.7%, p < 0.001) had history of heart failure, 11.3% (vs 7.0%, p < 0.001) had history of stroke, 18.2% (vs 20.6%, p = 0.062), had history of ACS and 8.1% (vs

5.4%, p < 0.001) had peripheral arterial disease. Regarding major adverse cardiovascular events (MACE), AF pts had higher rates of re-infarction (2.5% vs 0.8%, p < 0.001), heart failure (45.7% vs 14.3%, p < 0.001), cardiogenic shock (16.1% vs 3.6, p < 0.001), mechanical complications (1.8% vs 0.6%, p < 0.001), atrioventricular block (8.0% vs 2.2%, p < 0.001), maintained ventricular tachycardia (7.8% vs 1.1%, p < 0.001), cardiac arrest (9.2% vs 2.4%, p < 0.001), stroke (2.0% vs 0.6%, p> 0.001), major hemorrhage (4.1% vs 1.4%, p < 0.001). In-hospital death rate was 11.0% (vs 3.4%, p < 0.001). It was possible to calculate the CVS in 1023 AF pts – 60 scored 0 points, 121 score 1 point and 842 scored ≥ 2 points. Logistic regression revealed that the CVS score was a predictor of *de novo* AF in ACS (*odds ratio* (OR) 2.07, *p* < 0.001, CI 1.74-2.47), with acceptable accuracy (area under curve 0.642, confidence interval 0.625-0.659). Regarding MACE rate in AF pts, CVS was predictive of heart failure (p = 0.049) and cardiac arrest (p = 0.001). Regarding follow-up, survival analysis revealed that higher CVS was associated with higher rates of 1-year mortality or CRS (composite outcome) (p = 0.016).
Conclusions: CHA2DS2-VASc score was a predictor of *de novo* AF in ACS and may be used as a prognostic tool regarding follow-up outcomes, namely mortality and CRA.

PO 101. EARLY AND LATE ONSET SUSTAINED VENTRICULAR TACHYCARDIA IN ACUTE CORONARY SYNDROME

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Introduction: Sustained ventricular tachycardia (SVT) complicates up to 20% of acute coronary syndromes (ACS) and it is, therefore, important to access its impact on prognosis.
Objectives: To evaluate predictors of early onset (< 48h) and late onset (≥ 48h) SVT.
Methods: Based on a multicenter retrospective study, data collected from admissions between 1/10/2010 and 4/09/2019. Patients (pts) were divided in two groups (G): A – pts that presented early onset SVT (ESVT), and B – pts that presented late onset SVT (LSVT). Pts without data on previous cardiovascular history or uncompleted clinical data were excluded. Logistic regression was performed to assess predictors of SVT in ACS. Survival analysis was evaluated through Kaplan Meier curve.
Results: Population – 29851 pts with ACS. 364 (1.2%) presented SVT. ESVT – 251 pts (69%); LSVT – 91 pts (25%). LSVT G was older (74 ± 13 vs 68 ± 14, p = 0.003), was admitted directly to cat lab less frequently (10.1% vs 24.8%, p = 0.003), had longer times from first symptoms to admission (440min vs 261 min, p < 0.001) and had higher rates of previous stroke (14.4% vs 6.8%, p = 0.028). LSVT G had higher rates of non-ST-elevation myocardial infarction (MI) (35.2% vs 23.1%, p = 0.025) and lower rates of ST-elevation MI (53.8% vs 71.7%, p = 0.002), although both G were similar regarding MI location (anterior – p = 0.135, inferior – p = 0.097). LSVT G had higher systolic blood pressure (130 ± 33 vs 122 ± 33, p = 0.050), presented more frequently in Killip-Kimball class ≥ 2 (52.5% vs 35.5%, p = 0.005) and with atrial fibrillation (21.2% vs 12.4%, p = 0.045), and had higher brain-natriuretic peptide (1075 vs 329, p < 0.001). During hospitalization, LSVT G used more diuretics (80.0% vs 47.8%, p < 0.001), amiodarone (62.2% vs 48.8%, p = 0.029), digoxin (8.9% vs 2.4%, p = 0.013) and levosimendan (11.1% vs 2.8%, p = 0.004). ESVT G had higher rates of performed coronariography (88.4% vs 79.1%, p = 0.028) but lower rate of 3 vessels disease (58.5% vs 70.8%, p = 0.017). LSVT G had higher rates of severe (< 30%) left ventricle dysfunction (32.9% vs 15.4%, p < 0.001) and need to non-invasive ventilation (23.1% vs 6.8%, p < 0.001), although need to invasive ventilation was similar (17.6% vs 23.2%, p = 0.266). ESVT G had higher rates of heart failure (34.7% vs 19.1%, p = 0.006), atrioventricular block (15.7% vs 1.1%, p < 0.001), atrial fibrillation (20.4% vs 7.7%, p = 0.006) and major haemorrhage (5.2% vs 0.0%, p = 0.024). LSVT G had higher rates of in-hospital death (44.4% vs 20.9%, p < 0.001) and longer in-hospital stay (14 days vs 7 days, p < 0.001). The G were similar regarding re-infarction (p = 0.216), shock (p = 0.179), mechanical complications (p = 1.00), cardiac arrest (p = 0.097) and stroke (0.348) rates. Event-free survival was higher in ESVT than LSVT (84.0% vs 68.8%, p = 0.020, OR 2.494).
Conclusions: LSVT pts seem to have a poorer prognosis compared to ESVT pts.

PO 102. IMPACT OF COVID-19 PANDEMIC ON ST-ELEVATION MYOCARDIAL INFARCTION: DATA FROM TWO PORTUGUESE CENTERS

Luís Resendes de Oliveira[1], Rui Campante Teles[2], Carina Machado[1], Sérgio Madeira[2], Nelson Vale[2], Carla Almeida[1], João Brito[2], Sílvio Leal[2], Luís Raposo[2], Pedro de Araújo Gonçalves[2], António Miguel Pacheco[1], Henrique Mesquita Gabriel[2], Manuel de Sousa Almeida[2], Dinis Martins[1], Miguel Mendes[2]

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Introduction: Recently during the COVID-19 pandemic there was a general belief in a reduction of hospital admissions due to non-infectious causes, namely cardiovascular diseases.
Objectives: To evaluate the impact of the pandemic in the admissions by ST elevation acute myocardial infarction (STEMI), during the first pandemic wave.

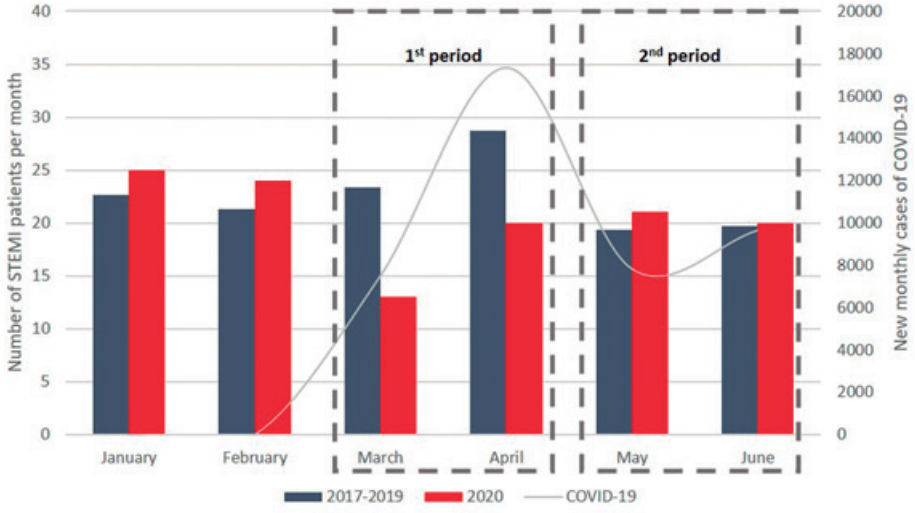

Figure - STEMI (colored bars) and COVID-19 (gray line) incidence over time.

PO 102 Figure

Methods: Multicentric and retrospective analysis of consecutive patients presenting in two Portuguese hospital centers with STEMI in two sequential periods – P1 (1st March to 30th April) and P2 (1st May to 30th June). A comparison of patient's clinical and hospital outcomes data was performed between the year 2020 and 2017 to 2019 for both periods.
Results: A total of 347 consecutive STEMI patients were included in this study. The patient's baseline characteristics and cardiovascular risk factors were similar across the considered periods. During P1 of 2020, in comparison with previous years, a reduction in the number of STEMI patients was observed (26.0 ± 4.2 vs 16.5 ± 4.9 cases per month; p = 0.033), contrary to what was observed during P2 (19.5 ± 0.7 vs 20.5 ± 0.7 cases per month; p = 0.500). Percutaneous coronary interventions in the setting of failed thrombolysis were more frequent (1.9% vs 9.1%; p = 0.033). A global trend in longer delays in time-key bundles of STEMI care was noted, namely pain to first medical contact, door to needle, door to wire crossing and symptoms to wire crossing times, however without statistical significance. Mortality rate was six-fold higher during P1 comparing to previous years (1.9% vs 12.1%; p = 0.005), and also an increase in the number of mechanical complications (0.0% vs 3.0%; p = 0.029) was observed.
Conclusions: During the first COVID-19 pandemic wave there were fewer patients presenting with STEMI at catheterization laboratory for coronary angioplasty. These patients presented more mechanical complications and higher mortality rates.

PO 103. ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION – ARE WOMEN BEING DISCRIMINATED?

Cátia Costa Oliveira[1], Filipe Vilela[2], Ana Sofia Ferreira[3], Carlos Galvão Braga[1], Paulo Medeiros[1], Carla Rodrigues[1], Fernando Mané[1], Rui Flores[1], Jorge Marques[1], João Costa[1]

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Introduction: Although outcomes in patients with ST-segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary interventions (PCI) have improved, a gender disparity exists, with women showing higher mortality.
Objectives: To assess gender differences in presentation, management and in-hospital, at 30-days, 6-months and 1-year after STEMI mortality.
Methods: We collected data from 809 consecutive patients treated with primary PCI and compared the females versus males.
Results: Women were older than man (69.1 ± 14.6 vs. 58.5 ± 12.7 years; p < 0.001) with higher prevalence of age over 75 years (36.7% vs. 11.7%; p < 0.001), diabetes (30.6%vs.18.5%; p = 0.001), hypertension (60.5% vs. 45.9%; p = 0.001), chronic kidney disease (3.4% vs. 0.6%; p = 0.010) and acute ischemic stroke (6.8% vs. 3.0%; p = 0.021). At presentation, women had more atypical symptoms, less chest pain (90.3% vs. 95.6%; p = 0.014) and greater clinical severity (cardiogenic shock (10.7% vs. 5.4%; p = 0.011). There were no differences in the symptom-first medical contact time (95.0 min vs. 80.5 min; p = 0.215); however, women had longer time until reperfusion (264.0 min vs. 212.5 min; p = 0.001) and were less likely to receive optimal medical therapy (aspirin-93.1% vs. 99.2%; p < 0.001; P2Y12 inhibitors 91.9% vs. 98.2%; p < 0.001; beta-blockers-90.8% vs. 95.1%; p = 0.032; ACEIs- 88.1% vs. 94.8%; p = 0.003). In-hospital mortality (9.6% vs. 3.5%; p = 0.001), at 30-days (11.3% vs. 4.0%; p < 0.001), 6-months (14.1% vs. 4.7%; p < 0.001) and 1-year (16.4% vs. 6.3%; p < 0.001) was significantly higher in women. The multivariate analysis identified age over 75 years (HR = 4.25; 95%CI [1.67-10.77]; p = 0.002), Killip class II (HR = 8.80; 95%CI [2.72-28.41]; p < 0.001), III (HR = 5.88; 95%CI [0.99-34.80]; p = 0.051) and IV (HR = 9.60; 95%CI [1.86-48.59];p = 0.007), acute kidney injury (HR = 2.47; 95%CI [1.00-6.13]; p = 0.051) and days of hospitalization (HR = 1.04; 95%CI[1.01-1.08]; p = 0.030) but not female gender (HR = 0.83; 95%CI [0.33-2.10]; p = 0.690) as independent prognostic factors of mortality.
Conclusions: Compared to men, women with STEMI undergoing primary PCI have higher mortality rates. Our results suggest that this is not due to the gender itself, but due to the women worse risk profile, the higher reperfusion time related with system delays and the minor probability of receiving the recommended therapy. Efforts should be made to reduce these gender differences.

PO 104. WONDER WOMAN AFTER AN ACUTE CORONARY SYNDROME

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Introduction: Patients an acute coronary syndrome (ACS) have a higher risk of further major adverse cardiovascular events (MACE). The aim of this study was to evaluate sex-specific differences in MACE and coronary events after an ACS episode.
Methods: ACS patients admitted to a single coronary unit between 2009 and 2016 were included. Cox proportional hazards models were used to compare time-to-event outcomes stratified by sex. For the follow-up, major adverse cardiovascular cerebrovascular events (MACE; all-cause death, myocardial infarction, revascularization and stroke) were documented.
Results: A total of 1544 patients were enrolled (29.9% women [n = 462]). Women were older (73.6 ± 12.2 vs. 65.1 ± 12.9 years; p < 0.001) and more likely to have diabetes mellitus (p = 0.012), hypertension, and chronic kidney disease (p < 0.001). Prior coronary artery disease was reported less frequently in women (24.9% vs. 34.2%; p < 0.000). Percentage of hyperlipidemia were comparable, although more women were under statin therapy (59.7% vs 49.2%, p < 0.000). Pre-treatment with anti-thrombotic therapy was comparable between sexes. Over a median follow-up of 47 months, women had a lower risk of all-cause death (unadjusted hazard ratio: 0.65; 95% confidence interval: 0.54 to 0.79; p < 0.000). In contrast, risk for MACE, re-infarction and further revascularization were not different by sex.
Conclusions: Women with an ACS are at lower risk for all-cause mortality but risk for re-infarction and future revascularization was similar between sexes. Further understanding of the dissociation between basal cardiovascular profile risk and subsequent events is warranted.

PO 105. CARDIOGENIC SHOCK IN PATIENTS SEVERE LEFT VENTRICULAR DYSFUNCTION OWING TO ACUTE MYOCARDIAL INFARCTION

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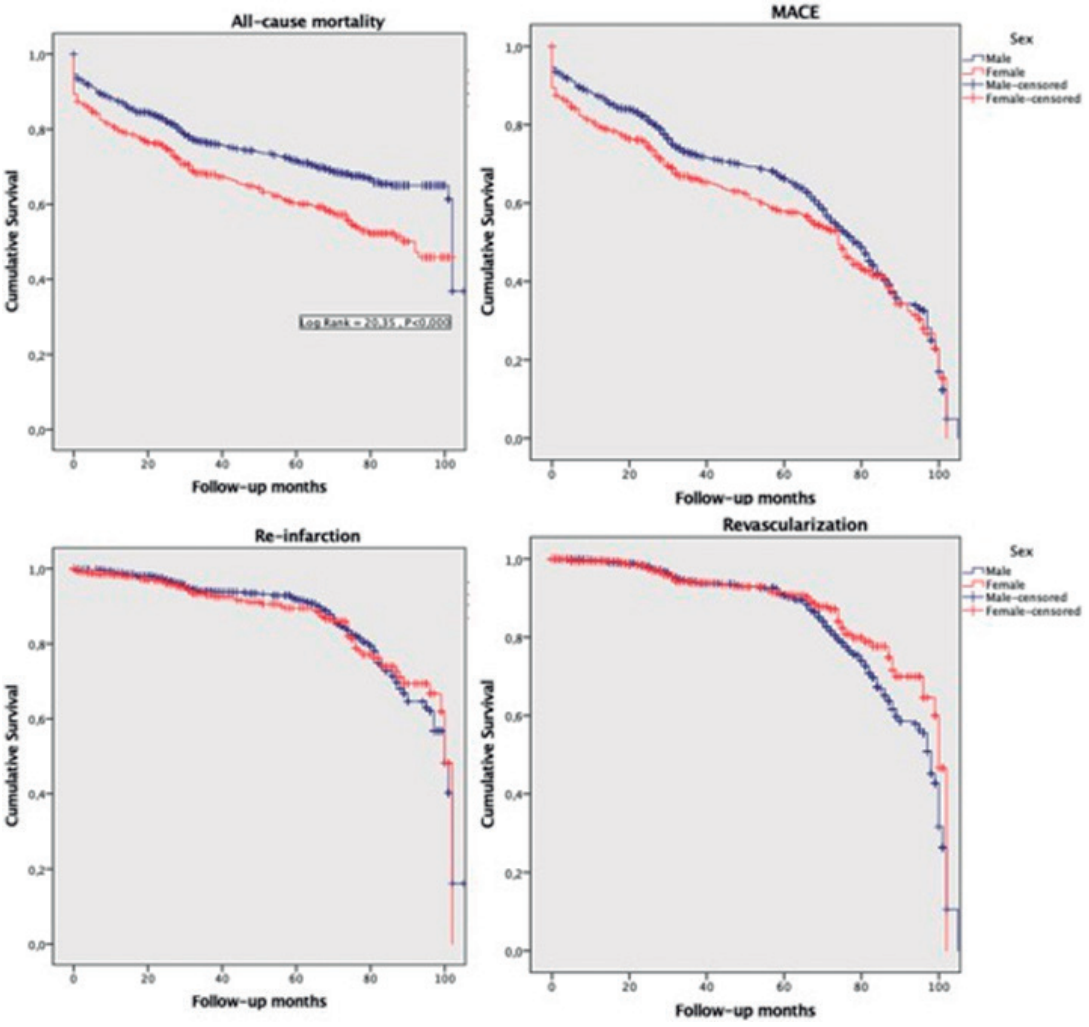
Introduction: Left ventricular function is assumed to be the main predictor of cardiogenic shock (CS), however trials and registries show that in average left ventricular function is only moderately depressed in CS after acute myocardial infarction.
Objectives: Characterize population of patients (Pts) with CS after acute myocardial infarction (AMI) and with severe left ventricular dysfunction (defined as ejection fraction (EF) < 30%).
Methods: From a national multicenter registry, we evaluated 729 pts with CS after AMI. We considered 2 groups: Group 1-Pts with CS and EF< 30% and Group 2- Pts with CS and EF > 30%. We registered age, gender, cardiovascular and non-cardiovascular comorbidities, electrocardiographic presentation, vital signs at admission, reperfusion strategy and coronary anatomy. We also evaluated in-hospital complications, such as re-infarction, mechanical complications, high-grade atrial ventricular block, sustained ventricular tachycardia (VT), atrial fibrillation (AF) and stroke. We compared in-hospital mortality and multivariate analysis was performed to assess the impact of EF in in-hospital mortality and to identify predictors of severe left ventricular function.
Results: Severe dysfunction in Cardiogenic shock due to AMI was present in 28.9% (n = 211) of pts (68% male, mean age of 72 ± 12 years old). Group 1 had higher incidence of previous heart disease, such as AMI, previous PCI and congestive heart failure (27% vs 14%, p < 0.001; 17.7% vs 9.6%, p = 0.002 and 16% vs 10%, p = 0.022, respectively). STEMI pts were 71% (n = 149), and timing from symptoms until first contact was longer (185 min (90; 437) vs 123 (60; 300), p < 0.001). Undetermined location AMI was more often in group 1 (8% vs 2%, p < 0.001), particularly due to left or right bundle brunch block (13% vs 4.7%, p < 0.001, and 15% vs 10%, p = 0.041 respectively). Anterior STEMI was also more prevalent in these groups (81% vs 46%, p < 0.001). No differences were observed on coronariography rate, rate or type of reperfusion nor multivessel disease. Group 1 pts presented more with left



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main (LM) (25% vs 12%, p < 0.001) and anterior descending (AD) (9.4% vs 2.4%, p < 0.001) arteries lesions (88% vs 72.4%, p < 0.001) or occlusion (65.5% vs 33.7%, p < 0.001). Group 1 presented more with in-hospital VT (16% vs 10.8%, p = 0.048). In-hospital mortality was also higher (56.5% vs 29.5%, p < 0.001). After multivariate analysis we found that severe left ventricular dysfunction was a mortality predictor (OR 3.37; IC95% [2.05-5.54], p < 0.001). LM (OR 3.41; 95%CI 1.86-6.26, p < 0.001) and AD (OR 2.74; 95%CI 1.51-4.96, p = 0.001) arteries disease and previous AMI (OR 2.36; 95%CI 1.28-4.37, p = 0.006) were predictors of severe LV dysfunction.
Conclusions: Severely depressed EF is a predictor of in-hospital mortality. Left main and anterior descending artery disease and previous AMI were identified as predictors of an EF< 30%.

PO 106. IMPACT OF PREHOSPITAL ELECTROCARDIOGRAM ON TIME TO TREATMENT AND IN-HOSPITAL OUTCOMES IN ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

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Introduction: Time to treatment is crucial in patients with ST-segment elevation myocardial infarction (STEMI). Delays in diagnosis and reperfusion are associated with worse prognosis.

Objectives: To determine the impact of prehospital electrocardiogram (PH-ECG) on time to diagnosis and reperfusion and in-hospital clinical outcomes in patients with suspected STEMI.
Methods: Prospective study of consecutive patients with suspected STEMI admitted to a single percutaneous coronary intervention (PCI) centre, with emergency medical system (EMS) based prehospital care and transportation. Baseline clinical and demographical data were collected, as well as system delay (time from national emergency number call [NEMC] to reperfusion) and its components. The population was divided in two groups (PH-ECG – group 1; no-PH-ECG – group 2). A clinical endpoint of death, new onset heart failure or presumed new left ventricular dysfunction was compared between groups, and logistic regression was used to assess the impact of PH-ECG on this endpoint.
Results: Of 129 patients, 45 were excluded due to non-EMS based prehospital care (mainly self-admission on emergency department). 84 patients were studied, with a mean age of 65 ± 14 years and 61 (73%) were male. 45% of patients (n = 45) had an ECG in the pre-hospital setting. No difference in baseline characteristics was found between groups (Table). More patients in group 1 were admitted to a PCI-centre (87% vs 63%, p = 0.014); nevertheless, 5 patients in group 1 were initially admitted to a non-PCI centre. Considering time variables, group 1 had lower system delay (178 ± 126 vs 271 ± 169 minutes, p = 0.007), lower time from NEMC to first medical contact (FMC) (28 ± 18 vs 68 ± 38 minutes, p < 0.001), lower time from FMC to ECG (12 ± 13 vs 58 ± 90 minutes, p = 0.001), but no difference regarding FMC to reperfusion time (150 ± 119 vs 208 ± 158 minutes, p = 0.065). Considering clinical outcomes, PH-ECG was associated with a lower incidence of the composite endpoint (32% vs 54%; p = 0.048). After multivariate adjustment,

PH-ECG remained an independent predictor of reduced composite endpoint (OR 0.388, 95%CI 0.158-0.951, p = 0.038).

Baseline clinical and demographical characteristics

	PH-ECG (group 1)	No-PH-ECG (group 2)	P value
Male	29 (76%)	33 (70%)	0.490
Age (years)	62 ± 14	67 ± 13	0.114
MI	7 (18%)	7 (15 %)	0.695
PCI	7 (18%)	8 (17%)	0.902
CAGB	1 (3%)	0 (0%)	0.452
Hypertension	23 (61%)	33 (72%)	0.278
Diabetes mellitus	14 (37%)	10 (22%)	0.127
Dyslipidaemia	26 (68%)	29 (63%)	0.606
Smoking habits	18 (47%)	21 (46%)	0.875

CABG, Coronary artery bypass grafting; MI, myocardial infarction; PCI, percutaneous coronary intervention; PH-ECG, prehospital electrocardiogram.

Conclusions: PH-ECG is associated with better system performance and clinical outcomes in STEMI patients, however it is significantly underused. Local and national strategies and relevant policies should be urgently adopted to promote widespread expedited PH-ECG use.

PO 107. ACUTE CORONARY SYNDROME: APPLICATION OF THE GRACE SCORE, TIMI SCORE AND CREATION OF A NEW LABORATORIAL SCORE

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Introduction: Acute coronary syndrome (ACS) is a clinical entity which includes a heterogeneous group of patients with different outcomes. Risk scores are in this setting a resourceful tool to identify the subset of patients with a worse prognosis, in order to plan therapeutic and surveillance strategies.
Objectives: To create a risk score – Laboratory Risk Score (LRS) – which exclusively includes analytical and echocardiographic parameters, as a predictor of adverse outcomes (in-hospital mortality and 1-year mortality), and compare it with other well-known scores: GRACE Score (GS) and TIMI-score (TS).
Methods: A retrospective cohort study was conducted, which included patients admitted in the Cardiology Department with the diagnosis of ACS. In order to calculate the new LRS, the authors attributed the value of 1 to each of the satisfied condition from the following: leucocytes > 11.7 g/L, hemoglobin < 13.3 g/dL, red cell distribution width > 14%, prothrombinemia < 90%, glycaemia at admission > 143 mg/dL, urea > 53.5 mg/dL, creatinine > 1.16 mg/dL, reactive C-protein > 1.0 mg/dL, maximum troponin > 35.0 ng/dL, natriuretic brain peptide > 416 pg/dL and left ventricular ejection fraction < 40%. LRS resulted from the sum of the satisfied conditions. ROC curves for LRS, GS and TS to predict in-hospital mortality and to predict 1-year mortality were constructed. The statistical analysis was performed in SPSS and Medcalc. p value < 0.05 was considered statistically significant.
Results: 1,714 patients (70.4% male, average age 69 ± 13 years-old) were included in this study. Intra-hospital mortality rate was 6.8% and 1-year mortality rate after de discharge was 4.8%. The areas under the ROC curves for predicting in-hospital mortality were the following: 0.790 (LRS, p < 0.001), 0.793 (GS, p < 0.01), 0.817 (TS, p < 0.001). For predicting 1-year mortality, the areas under the ROC curves were: 0.715 (LRS, p < 0.001), 0.761 (GS, p < 0.001), 0.742 (TS, p < 0.001). Pairwise comparison of ROC curves showed no significant differences between the scores.
Conclusions: The above-mentioned risk scores, including the new LRS, are obtained with non-invasive and widely available parameters and displayed a good performance in predicting in-hospital and 1-year mortality. Pairwise comparison of ROC curves demonstrated that the new laboratorial score was not inferior predicting adverse outcomes. The SRL is an easily obtained score, that shows a statistical significance in predicting mortality, especially the prediction of in-hospital mortality.

PO 108. THE MISSING MYOCARDIAL INFARCTIONS IN THE COVID-19 PANDEMIC: A REPORT OF A TERTIARY CENTER

Inês Pereira Oliveira[1], Mariana Silva[2], Ana Rita Moura[3], Gualter Silva[2], Ana Neto[1], Pedro Queirós[2], Mariana Brandão[2], Diogo Ferreira[2], Daniel Caeiro[2], Adelaide Dias[2], João Azevedo[1], Pedro Braga[2], Ricardo Fontes-Carvalho[2]

[1]Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa. [2]Centro Hospitalar de Vila Nova de Gaia/Espinho. [3]Hospital Distrital de Santarém, EPE.

Introduction: The COVID-19 outbreak led to a global decrease in the number of acute coronary syndrome (ACS) admissions, which may result in an increase in early and late-infarct related morbidity and mortality.
Objectives: To characterize the clinical and epidemiological profile of a cohort of patients (pts) admitted for myocardial infarction (MI) during the COVID-19 pandemic, trying to understand the differences from the pre-COVID-19 equivalent period.
Methods: Unicentric, retrospective analysis of pts with type 1 MI admitted to a Cardiac Intensive Care Unit (CICU). Pts were divided in 2 groups: G1) Pre-COVID-19 (August-December 2019) and G2) COVID-19 (August-December 2020). Clinical characteristics, patient delay, ventricular function, morbidity and in-hospital mortality were analysed.
Results: A total of 382 pts were included. While the total number of pts admitted to CICU reduced by 10.5%, the number of MI admissions fell by 34.6% from August-December of the COVID-19 pandemic comparing with the previous year (G2: n = 151 vs G1: n = 231). No significant differences in mean age (G2: 64.7 ± 12.6 years vs G1: 64.3 ± 12.6 years), sex (G2: n = 117, 77.5% males vs G1: n = 181, 78.4%) or risk factors' prevalence. The drop in ACS admissions was mainly due to a decrease in non-ST elevation MI (NSTEMI) (G2: n = 56, 37.1% vs G1: n = 115, 49.8%, p = 0.015), representing a reduction of 51.3%. In contrast, the number of ST-elevation MI (STEMI) decreased by only 17.0%, making most of hospitalizations (G2: n = 91, 60.3% vs G1: n = 110, 47.6%, p = 0.016). Late admissions (> 48 hours after symptom onset) significantly increased (G2: n = 18, 12.4% vs G1: n = 11, 5.0%, p = 0.01) and Killip-Kimball (KK) class at presentation was higher (G2: n = 24, 15.9% in KK III/IV vs G1: n = 12, 5.2%, p < 0.001). G2 also had higher maximum troponin levels (G2: 5,024.1ng/L vs G1: 3,156.6 ng/L, p = 0.008), worse left ventricular (LV) function (G2: n = 53, 35.1% had moderate-severe LV function vs G1: n = 42, 18.2%, p < 0.05) and higher rate of mechanical complications (G2: n = 3, 2.0% vs G1: 0%, p = 0.03). However, no significant differences in NT-proBNP levels, Q waves development, average hospital stay, treatment strategy and in-hospital mortality were found.
Conclusions: A significant decline in the number of MI admissions during the COVID-19 outbreak was found, mostly NSTEMI. The decrease was less pronounced in STEMI, suggesting that more serious pts attended emergency services. Increased pt delay, worse KK class, worse LV function and higher complication rate were found, although in-hospital mortality rate was similar.

PO 109. CHARACTERIZATION AND QUALITY OF CARE INDICATORS IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION WITHOUT ST SEGMENT ELEVATION

Francisco Cláudio[1], Rita Rocha[1], Mafalda Carrington[1], João Pais[1], Diogo Brás[1], Rui Guerreiro[1], Kisa Hyde-Congo[1], David Neves[1], Ana Rita Santos[1], Bruno Piçarra[1], em nome de todos os investigadores do RNSCA[2]

[1]Hospital do Espírito Santo, EPE, Évora. [2]CNCDC – Centro Nacional de Coleção de Dados em Cardiologia.

Introduction: The definition of the quality of care in healthcare services is paramount to implement the resources necessary to grant the best quality

of care according to the current guidelines. Recently, the European Society of Cardiology's guidelines for the management of acute coronary syndromes without ST segment elevation (NSTEMI) were published, and defined the quality indicators to be evaluated in such patients.
Objectives: To characterize the level of care given to the population of patients with NSTEMI included in the a national registry since 2011, according to the new guidelines directives.
Methods: We evaluated 12,193 patients with NSTEMI. For each year the following variables were analyzed: age, gender, cardiovascular and non-cardiovascular comorbidities, clinical presentation (rhythm, blood pressure, Killip-Kimball Class), left ventricular ejection fraction (LVEF), treatment during admission and discharge, and time to invasive coronary angiography (ICA). Besides this, a comparing between years was made to analyze differences according to the quality indicators established in the guidelines.
Results: In 2019, 83.9% of patient with LVEF < 40% were treated with IECA/ARA II and 80.6% were prescribed a betablocker at discharge. No statistically significant differences were found across the year with respect to IECA/ARA II at discharge (p = 0.495), and beta-blocker at discharge (p = 0.812). In terms of P2Y12 inhibitors during the hospital admission, there was a statistically significant increase in its use when comparing 2019 to 2014, 2015, 2016 and 2017 (p = 0.019 for 2014 and p < 0.001 the following years), with prescription in 90.4% of the patients in 2019. At discharge 88.3% of the patients were prescribed a P2Y12 inhibitor in 2019 and there was also a statistically significant increase in its prescription when compared to the previous years (from 2011 to 2017 with a p < 0.001). When it comes to the prescription of statins at discharge there was a statistically significant difference between groups, driven mostly by an increase compared to the year 2012 (95.6% vs 90.8%, p = 0.005). Only 16% of patients were subjected to ICA within 24h of admission during the year 2019. No statistically significant difference was found between other years (p> 0.100 when comparing between years).
Discussion: The most striking feature that can be improved is the amount of patients subject to ICA within the first 24h after diagnosis. When it comes to the P2Y12 inhibitors it is also clear that there has been an increase in its prescription during the admission and at discharge. To sum up, it is clear that there is still some margin to improve care, of at least 10-20% in most parameters. This data portrays a picture of the measures and steps to take in order to provide the adequate care according to the latest guidelines.

PO 110. OPTIMAL TIMING OF INTERVENTION IN NSTE-ACS WITHOUT PRE-TREATMENT

Inês Almeida[1], Mariana Santos[1], Hélder Santos[1], Hugo Miranda[1], Joana Chin[1], Catarina sá[1], Samuel Almeida[1], Catarina Sousa[1], Lurdes Almeida[1], Registo Nacional de Síndromes Coronárias Agudas[2]

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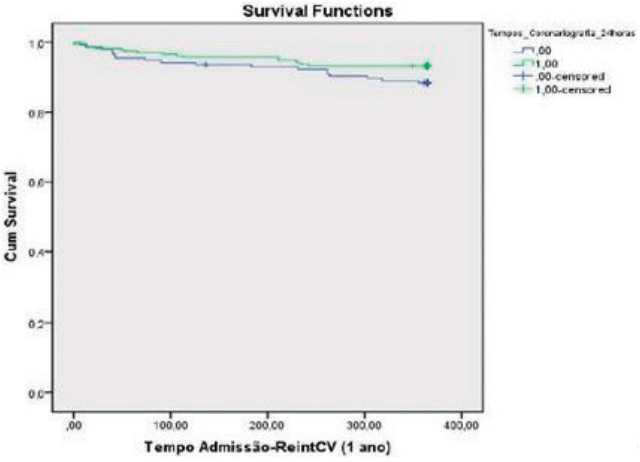
Introduction: In patients (P) with non-ST segment elevation acute coronary syndromes (NSTE-ACS), an invasive strategy is recommended to reduce adverse outcomes. The optimal timing to perform coronary angiography (CA) remains undetermined, particularly in our era attending to the new European guidelines restricting pre-treatment (PT).
Objectives: To evaluate the prognostic value of an early strategy (ES; < 24h) versus a delayed strategy (DS; > 24h) when no loading dose of a P2Y12 antagonist was given as PT in NSTE-ACS.
Material and Methods: Retrospective analysis of P data admitted with NSTE-ACS at multicentric national registry between 2015-19. Compared demographic and clinical characteristics of P with an ES versus DS. A multivariate logistic regression was performed to evaluate predictor factors of in-hospital and 1-year endpoints. Survival was evaluated through Kaplan-Meier curve and Cox multivariate regression.
Results: 691P were included, mean age 64 ± 11 years, 77.4% male. 59.2% performed CA as an ES. P proposed to a DS presented higher KK class, higher levels of creatinine and lower of hemoglobin. They also needed more frequently invasive (1.1 vs 0.7%, p = 0.692) or non-invasive ventilation (1.8 vs 0.7%, p = 282). A higher proportion of DS patients used the transfemoral access (5.5 vs 9.3%, p = 0.058). On CA, 6.2% had normal coronary arteries, 49.2% 1-vessel disease and 45.1% multivessel disease. Revascularization was performed in 88.2%: PCI in 86.2%, CABG in 1.7% and both in 0.3%, with no significant differences. Pending CA, 98.4% were medicated with aspirin, 64.8% ticagrelor and 44% clopidogrel, with no differences. P proposed to an ES were more medicated with glycoprotein inhibitor (36.3 vs 26.4%, p = 0.015) and non-fractioned heparin (6.4 vs 2.1%, p = 0.01) and less with fondaparinux (56.2 vs 65.2%, p = 0.017). A higher percentage of calcium-channel blockers (25.2 vs 11.7%, p < 0.001) and nitrates (74.1 vs 53.3%, p < 0.001) was observed in the DS. No difference was observed in beta-blockers (p = 0.581). Discharge medication followed these tendencies. There was a trend to worse in-hospital outcomes in the DS regarding heart failure, shock, ventricular arrhythmias, cardiac arrest and death, although not significatively different, except for major bleeding (1.8 vs 0.2%, p = 0.044). 1-year composite endpoint of mortality and cardiovascular rehospitalization occurred in 9.9%, with no difference between groups (p = 0.181). Predictor factors, evaluated through Cox multivariate regression, were ejection fraction < 50% (p = 0.001), KK class > I (p = 0.002) and nitrate prescription at discharge (p = 0.001). A DS was not a predictor factor (p = 0.812).



Conclusions: Our results are in accordance with available data. In P with higher-risk NSTE-ACS in the absence of P2Y12 antagonist PT, an ES was not associated with a reduction in the composite of global mortality and rehospitalization for cardiovascular causes.

PO 111. IS MAJOR BLEEDING RELATED TO THE TIMING OF INTERVENTION IN NSTE-ACS?

Inês Almeida[1], Hélder Santos[1], Mariana Santos[1], Hugo Miranda[1], Joana Chin[1], Catarina sá[1], Samuel Almeida[1], Catarina Sousa[1], Lurdes Almeida[1], Registo Nacional de Síndromes Coronárias Agudas[2]

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Introduction: The use of potent antithrombotic drugs reduced ischaemic risk in patients with NSTE-ACS but is invariably associated with an increased bleeding risk, negatively affecting prognosis and survival. Previous trials showed that in patients with NSTE-ACS with no pre-treatment (PT) both early and delayed strategies had similar safety regarding bleeding events.
Objectives: To evaluate the prognostic value of an early strategy (ES; < 24h) versus a delayed strategy (DS; > 24h) in NSTE-ACS without PT regarding major bleeding.
Methods: Retrospective analysis of patients´ data admitted with NSTE-ACS at multicentric national registry between 2015-19. Compared demographic and clinical characteristics of patients with an ES versus DS. A multivariate logistic regression was performed to evaluate predictor factors of major bleeding during hospitalization.
Results: 691 patients were included, mean age 64 ± 11 years, 77.4% male. 59.2% performed coronary angiography as an ES and the others 40.8% as a DS. There was a trend to worse in-hospital outcomes in the DS regarding heart failure, shock, ventricular arrhythmias, cardiac arrest and death,

although not statistically significant. The only statistically significant endpoint was major bleeding (1.8 vs 0.2%, p = 0.044), observed in a higher percentage in DS group. 0.9% of overall population presented major bleeding. These patients were older (73 ± 16 vs 64 ± 11, p = 0.079). There were no significant differences regarding cardiovascular risk factors or other comorbidities. At admission, 25.9% patients were under aspirin and 10.9% one P2Y12 inhibitor. P proposed to a DS presented higher levels of creatinine and lower levels of hemoglobin. Pending coronary angiography, 98.4% were medicated with aspirin, 64.8% with ticagrelor, 44% clopidogrel, and 0.4% prasugrel, with no difference. There were also no differences regarding the anticoagulation strategy in both groups. Coronary angiography was performed in all patients of both groups. The preferred vascular access was the transradial in both groups (92.9% in overall population); however a higher proportion in the major bleeding group was used the transfemoral access (33.3 vs 6.8%, p = 0.061). On coronary angiography, 6.2% had normal coronary arteries, 49.2% 1-vessel disease and 45.1% multivessel disease. Revascularization was performed in 88.2%: PCI in 86.2%, CABG in 1.7% and both in 0.3%, with no significant differences. Predictor factors for major bleeding were age ≥ 75 years (p = 0.032) and previous bleeding (p = 0.013). Timing of coronary angiography (< 24 versus > 24h) was not a predictor factor (p = 0.99).

Conclusions: Our results are in accordance with published data: only age ≥ 75 years and previous bleeding were potent predictors of major bleeding, while the timing of coronary angiography did not show to predict major bleeding in the absence of P2Y12 antagonist pre-treatment.

PO 112. PRECISE-DAPT SCORE FOR LONG-TERM BLEEDING PREDICTION AFTER ACUTE CORONARY SYNDROME IN PATIENTS MANAGED WITHOUT PERCUTANEOUS CORONARY INTERVENTION

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Introduction: PRECISE-DAPT (PD) is a recently validated score for long-term bleeding prediction after percutaneous coronary intervention (PCI) with stenting in patients undergoing double antiplatelet therapy (DAPT). Our purpose was to evaluate if PD can also predict long-term bleeding and mortality in patients hospitalized due to acute coronary syndrome (ACS) and managed with conservative therapy (CT) or surgical myocardial revascularization (CABG).

Methods: We conducted a retrospective analysis of 993 patients admitted to a Cardiology ward due to ACS, planned to undergo DAPT with aspirin and a P2Y12 inhibitor for a minimum of 12 months, regardless of revascularization strategy. Bleeding event was defined as any Thrombolysis in Myocardial Infarction criteria (TIMI) minor or major bleeding. Kaplan-Meier survival plots were used to evaluate the predictive power of PD score on 12-month bleeding events (12MB) and 12-month mortality (12MM). Cox-regression analysis was used to evaluate the independent prognostic impact of PD score on these outcomes.

Results: Mean patient age was 69 (± 13) years; 69.2% were men. 42% had ST-elevation myocardial infarction. 74% of patients were treated with stent implantation (PCI), 12.3% with CABG and 13.7% underwent CT. 81% of patients maintained DAPT for at least 12 months of follow-up. 12MB event rate was 4.5%. 12MM was 11.7%. Kaplan-Meier analysis stratified by low *vs* high bleeding risk (PD < or ≥ 25, respectively), according to PD score, revealed significantly increased 12MB risk in the high-risk group (1.6% *vs* 8.2%, χ^2: 23.41, p < 0.001). When stratified by type of treatment – PCI, CABG or CT – PD score was a significant predictor of 12MB in patients treated with PCI or CT, but not in patients treated with CABG (10.5% vs 1.6%, χ^2: 21.844, p < 0.001 for PCI group; 9.5% vs 0%, χ^2: 4.918, p = 0.027 for CT; 8.6% vs 2%, χ^2: 2.370, p = 0.124 for CABG). 12MM analysis revealed that high bleeding risk patients, as defined by PD, had significantly higher mortality, in comparison with lower-risk patients (19.9% vs 4.4%, χ^2: 63.35, p < 0.001). When stratified by treatment, however, despite the fact that patients with high-risk PD score had numerically worse survival in all 3 subgroups, the results were statistically significant for PCI subgroup only (16% vs 2.9%, χ^2: 32.551, p < 0.001). Cox regression analysis revealed that PD score is an independent predictor of 12MB (HR: 1.096, p < 0.001) and 12MM (HR:1.076, p < 0.001), regardless of therapeutic management, even when accounting for other risk factors such as diabetes, platelet count, alcoholism and hypertension.

Conclusions: Patients treated with PCI or CT after ACS, with a high bleeding risk as assessed by PD score, have significantly higher risk of 12MB and 12MM. PD score might be a useful tool for long-term bleeding prediction and may aid in the decision of DAPT duration after ACS, even in patients who are not suitable for coronary revascularization.

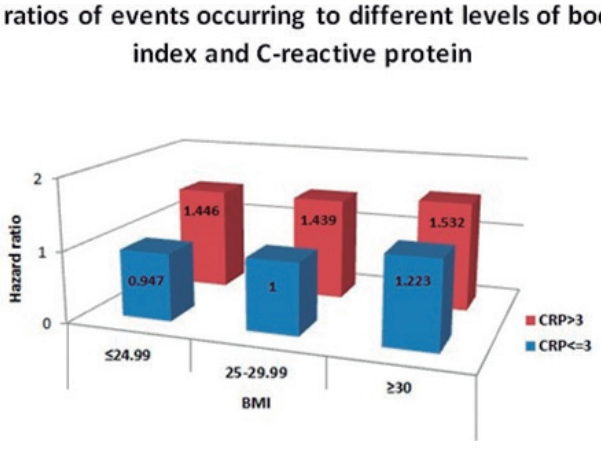
PO 113. CORRELATION OF BODY MASS INDEX, HIGH-SENSITIVITY C-REACTIVE PROTEIN AND PROGNOSIS IN A PORTUGUESE POPULATION WITH CORONARY ARTERY DISEASE

M. Raquel Santos[1], Maria Isabel Mendonça[2], Margarida Temtem[2], Flávio Mendonça[2], João Adriano Sousa[2], Ana Célia Sousa[2], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], Sofia Borges[2], Graça Guerra[2], António Drumond[1], Roberto Palma dos Reis[3]

[1]Hospital Dr. Nélio Mendonça. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]CEDOC, NOVA Medical School-Faculdade de Ciências Médicas da Universidade NOVA de Lisboa.

Introduction: Pro-inflammatory cytokines produced by the obesity "status" can promote atherosclerosis evolution. Systemic inflammation with high-sensitivity C-reactive protein (hs-CRP) elevation has long been implicated in atherosclerosis and coronary artery disease (CAD) morbidity.

Objectives: To investigate the correlation between the degrees of obesity (quantified by the body mass index (BMI), and hsCRP levels on the risk of CAD prognostic.



PO 113 Figure

Methods: The study included a cohort of 1,712 CAD patients aged 40-65 years old recruited from 2001 to 2018. The primary outcome of this study was a composite of all-cause vascular morbidity (MACEs) including recurrent acute coronary syndrome (myocardial infarctus and unstable angina), coronary revascularization (coronary artery bypass grafting (CABG)/percutaneous coronary intervention (PCI), rehospitalization for heart failure, ischemic stroke and dead (cardiovascular or all-cause mortality). Multivariate Cox regression models were used to estimate the association between BMI, hsCRP on the risk of CAD events during a median 4.9 ± 4.2 years follow-up.
Results: Comparing normal weight (BMI< 24.99 Kg/m^2) with pre-obesity (BMI 25-29.99 kg/m^2) patients, the Hazard ratio (HR) for events occurrence were similar either in the hsCRP≤ 3 mg/L or in the hsCRP> 3 mg/L group. HsCRP> 3 mg/L increased significantly the risk, whatever the weight of the patient. The Hazard ratio increased in patients with obesity (BMI ≥ 30 kg/m^2), even with normal HsCRP (Figure).
Conclusions: CAD patients with mild obesity (BMI 25-29.99 kg/m^2), compared with normal weight patients, did not present an increased risk of cardiovascular complications. Severe obesity in CAD patients presented increased cardiovascular risk in the follow-up. HsCRP> 3 mg/L was linked to a high cardiovascular risk, independent of the patient´s weight.

PO 114. ACUTE CORONARY SYNDROME IN A PANDEMIC: WHAT ABOUT NSTEMI?

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Introduction: The ongoing, and still growing, COVID-19 pandemic has placed an extra burden on health care systems. In an attempt to cope with it, several measures have been adopted in society and in health care institutions, including temporary suspension of elective medical activity and the creation of COVID and COVID-free circuits within hospitals. Data from various centres, including in Portugal, showed a reduction in admissions for ST-elevation myocardial infarction during the first COVID-19 outbreak.
Objectives: To assess the impact of this pandemic on the pattern of admissions and treatment of patients with non-ST-elevation myocardial infarction (NSTEMI) in a Portuguese district hospital.
Methods: A retrospective study was conducted in the Cardiology Department of a district hospital capable of performing 24h percutaneous coronary intervention (PCI). We analysed admissions for acute coronary syndrome (ACS) after the detection of the first COVID-19 case in Portugal (2nd March to 31st December – COVID period), compared them with exactly the same period in 2019 (2nd March to 31st December 2019 – control period) and assessed their association with the evolution of the pandemic. In particular for NSTEMI, we compared the number of admissions, patient characteristics, time from symptom onset (SO) to presentation in the emergency room (ER) and to PCI, as well as their outcomes.
Results: During the COVID period, there were 253 admissions for ACS, while in the control period there had been 290, with a mean of 6 hospitalizations per week (not differing from the control: 7 admissions/week, p = 0.111). There was no correlation between the weekly number of admissions for any type of ACS and the number of national weekly COVID-19 cases, hospitalizations or deaths. Analysing patients admitted for NSTEMI, there were no significant differences between the COVID (n = 120) and control group (n = 118) in demographics (median age of 71) and baseline characteristics. Their presentation also did not differ: median time from SO to the ER was 3 hours, with 8% of patients presenting in Killip class ≥ III (p > 0.05 for both). In both groups, around 97% of patients underwent coronary angiography. However, time from ER presentation to PCI was higher in the COVID period (median of 45 vs 24 hours, p < 0.001). Outcomes did not differ between groups, with a median length of hospital stay of 4 days and in-hospital mortality rate of 4% (p > 0.05 for both).
Conclusions: Our study suggests that the reduction in admissions for ACS during COVID-19 outbreaks is not universal and does not seem related to the national incidence of COVID-19. Particularly for NSTEMI, time from patient admission at the ER to coronary angiography increased but it did not lead to worse outcomes. This delay might be related to a policy of testing for COVID-19 before all non-emergent procedures.

PO 115. MYOCARDIAL INFARCTION, DIABETES AND HEART FAILURE: A DEADLY COMBINATION

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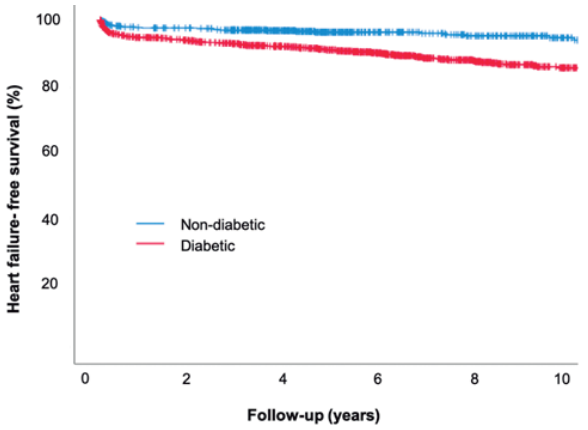
Introduction: The association between diabetes and heart failure (HF) is well documented, including in patients with coronary artery disease (CAD). However, little is known about the impact of diabetes on the risk of HF in patients with myocardial infarction (MI). Given that this could have

Table PO 115
Baseline characteristics

	Total (n=1800)	Non-diabetic (n=701)	Diabetic (n=1099)	P value
Age - years	64.4 ± 13.5	62.2 ± 14.4	65.9 ± 12.7	< 0.001
Male - no. (%)	1,420 (74.7)	552 (78.7)	785 (71.4)	0.001
Hypertension - no. (%)	1,109 (61.6)	385 (54.9)	724 (65.9)	< 0.001
Dyslipidemia - no. (%)	924 (51.3)	322 (45.9)	602 (54.8)	< 0.001
Current smokers - (%)	485 (26.9)	241 (34.4)	244 (22.2)	< 0.001
Previos PCI - no. (%)	29 (1.6)	8 (1.1)	21 (1.9)	0.03
Previous CABG - no. (%)	14 (0.8)	2 (0.3)	12 (1.1)	0.02
Diagnosis				0.16
Anterior STEMI - no. (%)	872 (48.4)	320 (45.6)	552 (50.2)	
Lateral STEMI - no. (%)	92 (5.1)	37 (5.3)	55 (5.0)	
Inferior/Posterior STEMI - no. (%)	836 (46.4)	344 (49.1)	492 (44.8)	
LDL cholesterol - mg.dL-1	135 ± 38	131 ± 39	128 ± 37	0.30
Creatinine at admission - mg/dL-1	1.10 ± 0.75	0.96 ± 0.53	1.15 ± 0.81	< 0.001
Glycemia at admission - mg/dL-1	158 ± 71	106 ± 12	177 ± 74	< 0.001
Peak troponin – ng/uL-1	43.5 (17.4-94.2)	26.5 (11.2-65.3)	53.5 (21.9-105.6)	< 0.001
LVEF	50 (42-56)	50 (45-57)	50 (40-56)	0.001

DM, diabetes mellitus; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting; STEMI, ST-elevation myocardial infarction; LDL, low density lipoprotein; LVEF, left ventricular ejection fraction.

important treatment implications, we aimed to assess the prognostic value of diabetes on the risk of HF and on mortality in ST-elevation MI (STEMI).
Methods: We conducted a retrospective, observational cohort study, including all patients with STEMI admitted to and discharged alive from an intensive cardiac care unit between 2004 and 2017 (n = 1902). Patients with prior MI were excluded (n = 102). The median (interquartile range) follow-up (FU) was 6 (4-10) years. The primary endpoint was hospitalization due to heart failure. The secondary endpoints were non-fatal MI and all-cause mortality.



Number at risk						
Non-diabetic	692	626	481	293	234	157
Diabetic	1069	890	759	598	408	268

Results: The mean age was 64 ± 14 years; 75% were male. Baseline demographics were considerably different in non-diabetic and diabetic patients (Table). The risk of developing HF during the index hospitalization was 24.7% among patients with diabetes and 13.6% among those without diabetes (unadjusted hazard ratio [HR] 2.1; 95%CI 1.6-2.7; p < 0.001). The rates of hospitalization for HF were 5% vs 3% at 1 year, and 15% vs 6% at 10 years for diabetic and non-diabetic patients, respectively. After adjusting for confounders, such as age, sex, hypertension, HF at index hospitalization and left ventricle ejection fraction, diabetic patients were at two-fold higher risk of HF hospitalization than patients without diabetes (HR 2.2; 95%CI 1.4-3.4; p = 0.001). Conversely, the rates of non-fatal MI were 3% vs 2% at 1-year, and 13% vs 10% at 10-year for diabetic and non-diabetic patients. However, after adjusting for known confounders, diabetes was not associated with increased risk of MI (HR 1.3; 95%CI 0.9-1.9; p = 0.09). Among patients who were alive for one year, diabetic patients who had been hospitalized for HF during the first year after STEMI had double the risk of death compared with diabetic patients who had not been hospitalized for HF (10-year mortality 59% vs 34%; HR 2.5; 95%CI 1.6-3.9; p < 0.001). Patients without diabetes who were hospitalized for HF during the first year also had a higher risk of death compared with patients without diabetes and without HF hospitalization (10-year mortality 54% vs 20%; HR 4.2; 95%CI 1.7-10.1; p < 0.001).
Kaplan-Meier plots of hospitalization for heart failure by diabetes status. Log-rank p < 0.001.
Conclusions: Our study shows that STEMI patients with diabetes are at a greater risk of developing HF, both at the acute stage and long after the MI. Interestingly, the incidence of acute HF is higher that recurrent MI in post-STEMI diabetic patients. Furthermore, in non-diabetic and diabetic patients, HF within the first year after STEMI is strongly associated with increased mortality. New strategies are urgently needed to avoid the development of HF after STEMI, especially in diabetic patients.

PO 116. INDIRECT EFFECTS OF COVID-19 PANDEMIC IN ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION: INSIGHTS FROM A MULTICENTRIC NATIONAL SURVEY

Héder Pereira[1], Rita Calé[1], Pedro Farto e Abreu[2], Ernesto Pereira[1], Investigadores Stent For Life e Stent Save a Life

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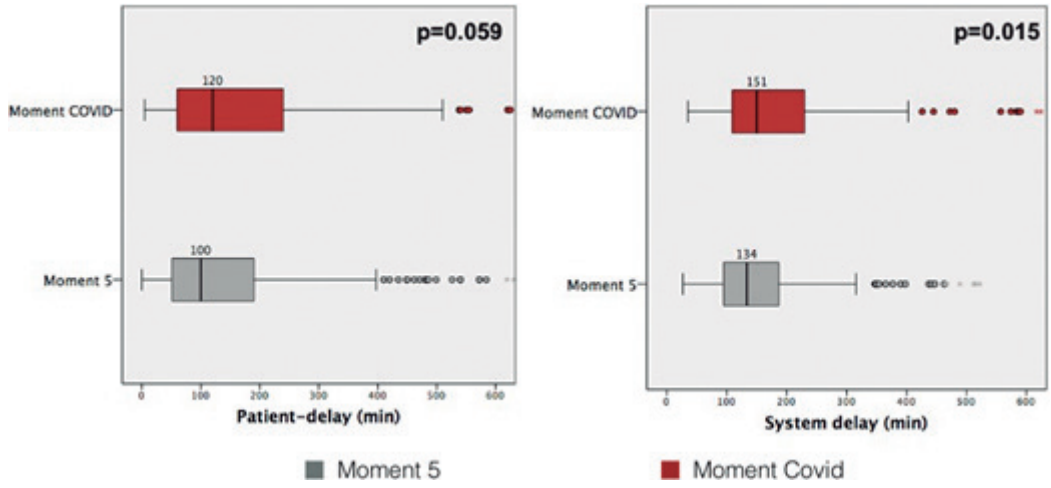
Objectives: Coronavirus disease 2019 (COVID-19) pandemic may have indirect consequences in ST-segment elevation myocardial infarction (STEMI) outcomes due to difficulties in healthcare access, but also due to reperfusion delays. The objective of this study was to evaluate the performance indicators in STEMI during the early phase of the lockdown following the COVID-19 pandemic.
Methods: The "patient delay" and the "system delay" were evaluated in 312 patients with suspected STEMI, in the period of the first State of Emergency in Portugal, through a survey called "Moment COVID" implemented within 18th March to 2nd May 2020, in 18 national centers of Interventional Cardiology where PPCI is carried out 24/7. These patients were compared with a historical cohort of 267 patients from the 5th year after the integration of SFL Initiative in Portugal (Moment 2015) in which the same survey was applied. Patients with late presentation of STEMI (> 12 hours of symptoms onset) were excluded from this analysis.
Results: In "Moment COVID" there was a trend towards a longer "patient delay" (incremental median 20 min; p = 0.059) and a significantly longer system-delay (incremental median 17 min; p = 0.033) compared to the historical cohort of "Moment 2015" (Figure). Consequently, the time to revascularization tended to be longer (incremental median 26 min; p = 0.074). Indeed, in "Moment COVID" patients were less compliant with the times recommended by the European guidelines: door-to-balloon time ≤ 60 min was achieved in 47.6% of patients compared to 57.0% (p = 0.052) in "Moment 2015" and system-delay ≤ 90 min in 13.9% compared to 21.8% (p = 0.033).



PO 116 Figure

Conclusions: These results from a multicentric national analysis demonstrated a trend to longer time from symptom onset to request healthcare system assistance and a significantly longer time from first medical contact to revascularization among patients with STEMI during COVID-19 pandemic. This delay in treatment could negatively impact the STEMI prognosis in the long-term.

PO 117. VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION SUPPORT FOR ACUTE FULMINANT MYOCARDITIS - A SINGLE-CENTER EXPERIENCE

Lisa Maria Ferraz[1], Catarina Costa[2], Rita Ferreira[2], Ana Faustino[1], Roberto Roncon Albuquerque[2], José Artur Paiva[2], Ana Neves[1]

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Introduction: Acute fulminant myocarditis (AFM) may be life threatening. Venoarterial extracorporeal membrane oxygenation (VA-ECMO) can provide an effective cardiocirculatory support.
Objectives: This study aims to evaluate the clinical course and the prognosis of patients (P) with fulminant myocarditis supported by VA-ECMO.
Methods: Observational retrospective single-center study of 15 consecutive P (73% women; 45.6 ± 11.6 years; body mass index 26.7 ± 2.23 kg/m^2) admitted to an intensive care unit (ICU) for AFM managed by peripheral VA-ECMO between 2008 and 2018. Were included P with diagnosis of myocarditis, recent onset of symptoms and severe hemodynamic compromise within 7 days following hospital admission. P were followed during 29.4 ± 8.4 months after discharge to identify rehospitalization due to cardiovascular causes (re-hosp), recurrence of myocarditis or death.
Results: The P had previous history of hypertension (20%), diabetes (13%), dyslipidemia (20%), autoimmune disease (7%), previous acute myocarditis (7%), 20% were former smokers and 7% active smoker. The main clinical presentation was chest pain (27%), dyspnea/heart failure (47%) and epigastric pain/nausea (13%). The media between symptom onset and hospitalization was 14.9 ± 6.5 days. The total hospital length of stay was 37 ± 6.9 days, with 18.7 ± 16.1 days in the ICU. During hospitalization, arrhythmias were documented in 40%: atrial fibrillation/flutter (13%), complete atrioventricular block (13%), ventricular tachycardia (13%), ventricular fibrillation (7%), asystole (7%) and electrical storm (7%). Medical therapy included corticosteroids in 47% of P, immunosuppressive therapy in 13% and intravenous immunoglobulin in 13%. The mean duration of VA-ECMO support was 8.5 ± 6.2 days. 27% had preserved left ventricular systolic ejection fraction (LVEF), 13% left ventricular dilation, 13% pericardial effusion and 13% late gadolinium enhancement. The mean LVEF was 23 ± 8.2%. Endomyocardial biopsy was diagnostic for 3 out of 4P in which was performed. The etiology of myocarditis was identified in 60% of P: viral (33%), autoimmune (7%) and pheochromocitoma (20%). During hospitalization 5P (33%) died (3 in the ICU). The P who died had higher liver sequential organ failure assessment (SOFA) and kidney SOFA scores before starting ECMO, both being predictors of mortality (liver SOFA: Cramér's V 0.76; 95%CI 0.009-0.014; p = 0.01; kidney SOFA: Cramér's V 0.79; 95%CI 0.03-0.04; p = 0.031). At discharge, the survival rate was 67% and the recovery of LVEF occurred in 47% of P. During follow-up, there were no re-hosp, recurrence of myocarditis or deaths and 53% of P had preserved LVEF.
Conclusions: AFM is associated with high mortality rates. Percutaneous VA-ECMO is a highly effective haemodynamic support that can be used as a "bridge to recovery". Once a patient recovers, the subsequent clinical outcome seems favourable.

PO 118. IMPACT OF ATRIAL FIBRILLATION TYPE IN ACUTE CORONARY SYNDROME AND ANTITHROMBOTIC STRATEGY

Carla Marques Pires, Paulo Medeiros, Cátia Oliveira, Rui Flores, Fernando Mané, Rodrigo Silva, Isabel Campos, Carina Arantes, Pedro Azevedo, António Gaspar, Miguel Álvares Pereira, Sérgia Rocha, Carlos Braga Galvão, Nuno Antunes, Jorge Marques

Hospital de Braga.

Introduction: Atrial fibrillation (AF) is an adverse prognostic factor during acute coronary syndrome (ACS). Current evidence recommends dual antithrombotic therapy (DAT), 1 antiplatelet drug and 1 anticoagulant drug, as the default strategy after nonST elevation ACS.
Objectives: To identify the clinical differences and prognosis of AF type-new onset (nAF) or pre-existing (pFA)- during ACS, to evaluate antithrombotic strategy at hospital discharge (HD) and its impact on haemorrhagic and ischemic events.
Methods: We performed a retrospective observational cohort study including 3241 patients (pts) with ACS (mean age 64 years, 77.5% male) admitted to a single center over a 6-year period, with 12-months follow-up.
Results: AF rhythm was identified in 11.2% pts, of whom 63.2% presented nAF and 36.8% pAF. When AF types where compared, pts with pAF had a higher prevalence of cardiovascular (Cv) comorbidities, including hypertension (p < 0.001), previous ACS (p = 0.03), valvular disease (p = 0.01) or stroke (p = 0.05), had greater left atrial diameter (p < 0.001) and were less likely to have significant coronary lesions (p = 0.05). Pts with nAF more frequently presented with ST elevation ACS (p < 0.001) and had a lower Hemoglobin *nadir* (p < 0.001). The independent predictors of nAF in ACS were age (OR 1.1, p ≤ 0.001), LVEF ≤ 40% (OR 2.2, p = 0.001), ST elevation ACS (OR 2.6, p ≤ 0.001) and previous valvular disease (OR 3.5, p ≤ 0.01). Compared with the population without AF, nAF was a predictor of in-hospital death (OR 2.9, p = 0.027) and in-hospital composite endpoint (death, stroke, reinfarction and cardiogenic shock) (OR 2.5,

ANTITHROMBOTIC STRATEGY AT HOSPITAL DISCHARGE*	FA (n=338)	pFA (n=129)	nFA (n=209)	*p-value*
Triple antithrombotic therapy (TAT), n(%) (2 antiplatelet drugs and 1 anticoagulant drug)	161(47.6)	77(59.7)	84(40.2)	*p<0.001*
Dual antithrombotic therapy (DAT), n(%) (1 antiplatelet drug and 1 anticoagulant drug)	42(12.4)	31(24)	11(5.3)	*p<0.001*
Just anticoagulant therapy, n(%)	10(3)	7(5.4)	3(1.4)	*p<0.001*
Just dual antiplatelet therapy, n(%)	121(35.8)	12(9.3)	109(52.2)	*p<0.001*
Choice of anticoagulant, n(%)	**213(63)**	**115(89.1)**	**98(46.9)**	
Vitamin K antagonist, n(%)	174(81.7)	91(79.1)	83(84.7)	
Rivaroxaban, n(%)	13(6.1)	8(7)	5(5.1)	*p<0.001*
Dabigatran, n(%)	12(5.6)	12(10.4)	0(0)	
Apixaban, n(%)	14(6.6)	4(3.5)	10(10.2)	
Stop the 2º antiplatelet in patients with TAT, n(%)				
1-month after hospital discharge	23(16.8)	9(13)	14(20.6)	
3-month after hospital discharge	19(13.9)	10(14.5)	9(13.2)	*p=0.294*
6-month after hospital discharge	60(43.8)	28(40.6)	32(47.1)	
12-month after hospital discharge	35(25.5)	22(31.9)	13(19.1)	

*Loss of follow-up of 4 patients.

PO 118 Figure

p = 0.001) in multivariate analysis, but pAF wasn't. During 12-months follow-up of pts with ACS and AF, there was no difference regarding death or follow-up composite endpoint (death, stroke and ACS) between the AF types. Regarding antithrombotic therapy, nAF pts were less often anticoagulated (p < 0.001) and pAF pts where more often treated with triple antithrombotic therapy (TAT) at HD (< 0.001). Most of the pts with TAT stopped the second antiplatelet at agent 6-months (43.8%) or 12 months (25.5%) after HD. During 12-months follow-up, pts discharged with TAT had trend towards more haemorrhagic events (TAT 6.2% vs DAT2.7%, p = 0.69) and both groups had similar ischaemic events (death, ACS, stroke) (TAT 20.9% vs DAT 23.7%, p = 0.714). In multivariate analysis the choice of TAT or DAT wasn't a predictor of ischaemic events.
Conclusions: In ACS, pts with nAF had worst in-hospital outcomes than pts with pAF. Regarding antithrombotic strategy at HD pts with nFA were less often anticoagulated and less often treated with TAT. In our study the choice between DAT or TAT had no statistical impact on follow-up outcomes.

PO 119. PREDICTORS OF OBSTRUCTIVE CORONARY ARTERY DISEASE IN ELECTIVE CORONARY ANGIOGRAPHY

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Hospital de Braga.

Introduction: In current clinical practice, despite the frequent use of noninvasive test (NIT) in addition to clinical assessment, there is a high percentage of patients(pts) undergoing elective invasive coronary angiography (ICA) with nonobstructive coronary artery disease (CAD).
Objectives: To identify the prevalence and predictors of obstructive CAD in pts undergoing elective ICA without known CAD.
Methods: We performed a cross-sectional study of 358 consecutive pts without known CAD undergoing elective ICA from April 2019 to March 2020. Patients demographics, cardiovascular(Cv) risk factors, symptoms status and NIT results were correlated with the presence of obstructive CAD, defined as any native coronary stenosis ≥ 50%.
Results: The study population consisted of 358 pts (72.6% male, mean age 65years), of whom 95% had at least one Cv risk factor and 78.5% had a positive NIT: exercise stress test (36.3%), stress echocardiogram (12.3%), stress cardiac magnetic resonance (3.9%), stress myocardial perfusion imaging (21.8%) or coronary computed tomography angiography (4.2%). The overall prevalence of obstructive CAD was 52.8%, which was significantly higher among pts with previous positive NIT (p = 0.013). However, 43.8% of pts with positive NIT had nonobstructive CAD. Pts with obstructive CAD had a mean age of 65 years and were more likely to be male (p < 0.001), to have smoking habits (p = 0.013), to present with typical angina (p < 0.001) and to have positive NIT tests (p = 0.013). As expected, this pts were less likely to present with noncardiac chest pain (p < 0.001) compared to non-obstructive CAD pts. In multivariate analysis, male gender (OR = 3.4, p < 0.001) and typical angina (OR = 3.8,p < 0.001) were independent predictors (IP) of obstructive CAD. Surprisingly, positive NIT failed to reach statistical significance by a narrow margin (OR = 1.7, p = 0.06). The presence of non-cardiac chest pain (OR = 2.4, p = 0.007) was an IP of nonobstructive CAD. In our study, 72 pts (20.1%) were submitted to percutaneous coronary intervention and 48 pts (13.4%) were proposed to coronary artery bypass surgery considering angiographic characteristics. The IP of the decision of revascularization were male gender (OR = 4.7, p < 0.001), typical angina (OR = 4.6, p < 0.001) and positive NIT (OR = 2.1, p = 0.04). Presence of noncardiac chest pain (OR = 3.3, p = 0.08) was an IP of the decision of nonrevascularization.
Conclusions: Nearly half of pts referred to elective ICA are found to have nonobstructive lesions. In our sample, clinical status was much stronger predictor than positive NIT results. Noteworthy that pts with positive NIT and nonobstructive disease could represent false-positive test or microvascular disease. In conclusion, current strategies that are used to refer pts to ICA need to be substantially improved to increase the diagnostic yield of this invasive exam.

PO 120. MULTIVESSEL DISEASE IN ST- ELEVATION MYOCARDIAL INFARCTION: WHAT IS THE BEST TIMING FOR COMPLETE REVASCULARIZATION?

Carla Marques Pires[1], João Costa[1], Rui Ferreira[2], Carlos Galvão Braga[1], Pedro Costa Ferreira[3], Marco Costa[4], Rui Campante Teles[5], Luís Brizida[6], Hélder Pereira[7], Luís Bernardes[8], José Baptista[9], Francisco Pereira Machado[10], Pedro Pinto Cardoso[11], João Carlos Silva[12], em nome dos Investigadores do Registo Nacional de Cardiologia de Intervenção.[13]

[1]Hospital de Braga. [2]Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta. [3]Centro Hospitalar Tondela-Viseu, EPE/Hospital de São Teotónio, EPE. [4]Centro Hospitalar e Universitário de Coimbra. [5]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz. [6]Hospital Curry Cabral. [7]Hospital Garcia de Orta, EPE. [8]CUF Hospital Infante Santo. [9]Unidade de Intervenção Cardiovascular do Algarve. [10]Hospital da Luz Lisboa. [11]Hospital de Lusíadas. [12]Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa. [13]Sociedade Portuguesa de Cardiologia.

Introduction: Multivessel disease occurs in approximately 50% of patients with ST-elevation myocardial infarction (STEMI). The current European guidelines recommend routine revascularization of non infarct-related artery during hospitalization (IIaA), although the optimal timing of non-culprit revascularization remains controversial.
Objectives: To assess the clinical differences and prognosis impact of complete revascularization (CR) during hospitalization or until 2 months after hospital discharge in STEMI patients with multivessel disease.
Methods: We performed a multicentric retrospective observational cohort study including patients with STEMI and multivessel disease without cardiogenic shock at admission over a 12-year period with 1-year follow-up. Patients without CR during hospitalization or until 2 months after hospital discharge were excluded.
Results: This study evaluated 20,873 patients with STEMI and multivessel disease, of whom just 12.2% underwent complete revascularization. After applying exclusion criteria, we analysed 1,782 patients with a mean age of 63 years and 75% of male gender. Then we divided 93.8% to Group 1 (G1), patients with CR during hospitalization, and 6.2% to Group 2 (G2), patients with CR until 2 months afterhospital discharge. G1 had a higher prevalence of female gender (p = 0.031) and a lower prevalence of some cardiovascular (Cv) risk factors, as dyslipidemia (p < 0.001), smoking habits (p < 0.001) and mellitus diabetes (p = 0.002). G2 more frequently presented with LVEF ≤ 40% (p = 0.018), were more likely to have complex coronary lesions (C-type lesions) (p < 0.001), to do thrombectomy (p < 0.001) and glycoprotein IIb/IIIa inhibitors (p < 0.001) during percutaneous coronary intervention (PCI), to have post-PCI renal failure (p < 0.001) and periprocedural complications (p < 0.001). In this study the timing for CR wasn't a predictor of in-hospital primary (composite of death, MI and stroke) and secondary (composite of death, MI, stroke and major bleeding) endpoint in univariate and multivariate analysis. Additionally, during 12-months follow-up, there was no difference between groups regarding death or follow-up primary endpoint (death, stroke, MI and angina at least II in CCS) in univariate and multivariate analysis.
Conclusions: Despite current knowledge supports complete revascularization in patients with STEMI and multivessel disease, our cohort revealed a low prevalence of CR (12.2%) irrespective of the timing of non-culprit lesion intervention. In our study we realized that the timing for CR had no impact on in-hospital and follow-up outcomes. However, is noteworthy to highlight that patients undergoing CR during hospitalization had lower prevalence of Cv risk factors, higher LVEF and less complex and uncomplicated PCI.

PO 121. ATRIOVENTRICULAR BLOCK IN ACUTE CORONARY SYNDROME PATIENTS

Hélder Santos[1], Mariana Santos[2], Inês Almeida[2], Hugo Miranda[2], Catarina sá[2], Joana Chin[2], Samuel Almeida[2], Catarina Sousa[2], Lurdes Almeida[2], on behalf of the Portuguese Registry of Acute Coronary Syndromes

[1]Centro Hospitalar Barreiro/Montijo, EPE/Hospital do Montijo. [2]Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário.

Introduction: The atrioventricular block (AVB) occurrence in acute coronary syndrome (ACS) is a potentially life-threatening complication, that demand a rapid and efficient response regarding reperfusion time and rhythm stabilization.
Objectives: Evaluate the impact and prognosis of AVB in ACS patients, as well as predictors of AVB.
Methods: Multicenter retrospective study, based on the Portuguese Registry of ACS between 1/10/2010-3/05/2020. Patients were divided into two groups: A – patients without AVB, and B – patients that presented AVB. Were excluded patients without a previous cardiovascular history or clinical data regarding AVB occurrence. Logistic regression was performed to assess predictors of AVB in ACS patients.
Results: From 32,157 patients, 23,774 was included, 23,148 in group A (97.4%) and 626 in group B (2.6%). Both groups were similar regarding initial symptoms until first medical contact (p = 0.410), smoker status (p = 0.222), arterial hypertension (p = 0.776), diabetes mellitus (p = 0.508), peripheral artery disease (p = 0.479), chronic kidney disease (p = 0.467) and re-infarction during the hospitalization for ACS (p = 0.145). Group A had higher body mass index (27.4 ± 4.4 vs 26.9 ± 4.6, p = 0.005), dislipidaemia (59.6 vs 51.4%, p < 0.001), coronary artery disease (18.9 vs 13.0, p < 0.001), heart rate (78 ± 19 vs 65 ± 25, p < 0.001), systolic blood pressure (139 ± 29 vs 119 ± 32, p < 0.001) and left ventricular ejection fraction (LVEF) > 50% (60.1 vs 51.7%, p < 0.001). On the other hand, group B was elderly (66 ± 13 vs 71 ± 13, p < 0.001), female (27.4 vs 32.4%, p < 0.001), previous stroke (6.9 vs 10.9%, p < 0.001), neoplasia (4.9 vs 6.8%, p = 0.031), ST-segment elevation myocardial infarction (46.2 vs 75.4%, p < 0.001), syncope as major symptom (1.3 vs 10.0%, p < 0.001), Killip-Kimball class > I (15.4 vs 31.6%, p < 0.001), multivessel disease (52.1 vs 61.4%, p < 0.001), heart failure complication (15.5 vs 40.6%, p < 0.001), cardiogenic shock complication (3.8 vs 24.6%, p < 0.001), new-onset of atrial fibrillation (4.2 vs 14.1%, p < 0.001), ACS mechanical complication (0.6 vs 3.2%, p < 0.001), sustained ventricular tachycardia during ACS hospitalization (1.3 vs 10.0%, p < 0.001), cardiac arrest (2.7 vs 13.3%, p < 0.001), stroke complication (0.6 vs 1.9%, p < 0.001) and hospitalization death (3.5 vs 19.0%, p < 0.001). Logistic regression revealed that female gender (odds ratio (OR) 1.422, p = 0.015, confidence interval (CI) 1.072-1.885), age ≥ 75 years old (OR 1.560, p = 0.002, CI 1.174-2.073), heart rate < 60 (OR 6.692, p < 0.001, CI 5.180-8.644) and Killip-Kimball class > I (OR 3.264, p < 0.001, CI 2.446-5.356) were predictors of AVB in ACS patients.
Conclusions: Female gender, age ≥ 75 years old, heart rate < 60 and Killip-Kimball class > I were predictors of AVB in ACS patients.

PO 122. IMPACT OF P2Y12 INHIBITORS PRETREATMENT ON DELAY TO CORONARY SURGERY IN A REAL-WORLD POPULATION WITH NSTE-ACS

Daniel A. Gomes[1], Bruno Rocha[1], Rita Reis Santos[1], Mariana Sousa Paiva[1], Marina Raquel Santos[2], Gonçalo Cunha[1], João Presume[1], Jorge Ferreira[1], Pedro de Araújo Gonçalves[1], José Neves[1], Rui Campante Teles[1], Manuel de Sousa Almeida[1], Marisa Trabulo[1], Carlos Aguiar[1], Miguel Mendes[1]

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Introduction: The most recent guidelines recommend against the pretreatment with P2Y12 inhibitors (P2Y12i) in patients with non-ST elevation acute coronary syndromes (NSTE-ACS) undergoing coronary angiography (CA) in the first 24h. The rationale is, in part, to prevent the delay of coronary artery bypass graft surgery (CABG) in patients with suitable coronary anatomy. This study aims to analyze the impact of this recommendation in a real-world population.
Methods: In this single-centre retrospective analysis, we reviewed all admitted NSTE-ACS patients in 2019 who underwent CA. Every patient received P2Y12i pretreatment. Patients with prior CABG (n = 31) and patients without obstructive disease (n = 57) were excluded. Enrolled patients were characterized according to the performance of CABG during index hospitalization. CABG under the effect of P2Y12i was defined as surgery performed within 5 days after CABG Uni- and multivariate analyses were performed, using indication for CABG as the outcome.
Results: Total cohort included 262 patients, mean age 68 ± 12 years, 69% male, mean GRACE score 134 ± 35 and 15% with unstable angina. A total of 61 patients discussed in Heart Team for surgery generated 45 in-hospital CABG. In multivariate analysis, previous percutaneous coronary intervention (PCI) (OR 1.94 [95%CI 1.04-3.62], p = 0.036) and diabetes mellitus (OR 2.39 [95%CI 1.32-4.36], p = 0.004) were independent predictors of indication for CABG before CA (Figure). Contrarily, age and GRACE score (≤ 140 versus > 140) did not differentiate those with surgical indication (16.6% vs. 18.8%, p = 0.656). Median time from CA to CABG was 12 (7-15) days and 5 (11%) patients underwent surgery under P2Y12i effect. Two patients (4.3%) assigned to CABG died before surgery (on day 1 and 6 post-CA) and 3 patients died in-hospital after CABG (days 19, 31 and 120 after CABG). Non-fatal major bleeding occurred in 1 out of 5 patients undergoing surgery under P2Y12i effect.

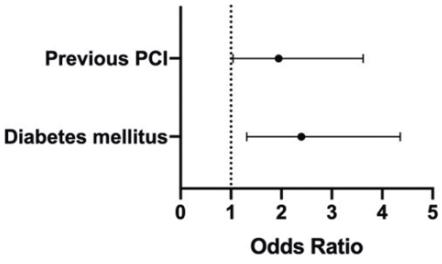

Figure 1 – Multivariate logistic regression analysis using indication for coronary artery bypass graft surgery as outcome

Conclusions: In a real-world NSTE-ACS population, the use of P2Y12i before CA was a non-dominant driver of CABG delay. Previous PCI and diabetes mellitus were independent predictors of indication for CABG.

PO 123. ANTITHROMBOTIC STRATEGY IN PATIENTS WITH ATRIAL FIBRILLATION AND ACUTE CORONARY SYNDROME

Inês Almeida[1], Hélder Santos[1], Mariana Santos[1], Hugo Miranda[1], Joana Chin[1], Catarina sá[1], Samuel Almeida[1], Catarina Sousa[1], Lurdes Almeida[1], Registo Nacional de Síndromes Coronárias Agudas[2]

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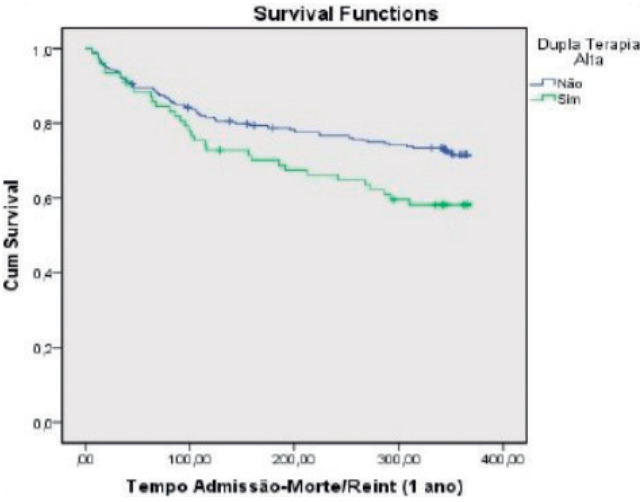
Introduction: Atrial fibrillation (AF) is frequent in patients admitted with acute coronary syndromes (ACS). The development of this arrhythmia occurs in 2-21% of patients with non ST-elevation ACS and 21% of ST-elevation ACS. According with the most recent European guidelines, a short period up to 1 week of triple antithrombotic therapy (TAT) is recommended, followed by dual antithrombotic therapy (DAT) using a NOAC and a single antiplatelet agent, preferably clopidogrel.
Objectives: To compare the antithrombotic strategy (DAT vs TAT) used and its prognostic value in patients with AF and ACS.
Methods: Retrospective analysis of patients´ data admitted with ACS in a multicentric registry between 10/2010-09/2019. TAT was defined as the prescription of dual antiplatelet therapy and one anticoagulant and DAT as one antiplatelet and one anticoagulant. Survival and rehospitalization were evaluated through Kaplan-Meier curve.
Results: 1,067 patients were included, mean age 67 ± 14 years, 72.3% male. Patients who developed *de novo* AF during hospitalization due to ACS were older (75 ± 12 vs 66 ± 14 years, p < 0.001) and with higher prevalence of cardiovascular risk factors and cardiovascular disease. AF was more often in patients with ST elevation ACS (53.4%). During hospitalization, AF patients were more often medicated with aspirin, glycoprotein inhibitor, heparin, fondaparinux and vitamin K antagonists. No difference was found regarding P2Y12 inhibitors. AF patients presented more often obstructive coronary disease (normal coronaries 5.4 vs 8.5%, p < 0.001) so they were more often submitted to PCI (79.5 vs 70.9%, p < 0.001). AF patients presented with higher rates of adverse in-hospital events as re-infarction, heart failure, shock, ventricular arrhythmias, cardiac arrest, stroke, major bleeding and

death (p < 0.001). At discharge, AF patients were less prescribed with aspirin or ticagrelor, but the rate of clopidogrel prescription was higher, such as vitamin K antagonists or any of the new anticoagulants. In the AF group, 21.5% patients were discharged with TAT and 30.3% with DAT. Concerning patients discharged with TAT, 1-year follow-up revealed no significant differences in mortality (p = 0.578), re-admission for cardiovascular causes (p = 0.301) and total re-admission rates (p = 0.291). Patients discharged with DAT had similar mortality (p = 0.623) and re-admission for cardiovascular causes rates (p = 0.138), but significant differences were identified regarding total re-admissions (p = 0.024).



Conclusions: In patients with ACS and *de novo* AF, a low percentage of patients was discharged with oral anticoagulation (51.8%). In those whose anticoagulation was initiated, DAT was the preferred strategy. 1-year outcomes were not different between the antithrombotic strategy, except for all cause re-admission.

PO 124. A SINGLE CENTER STUDY OF PATIENTS WHO SUFFERED CARDIAC ARREST WITH A PRESUMED DIAGNOSIS OF ACUTE CORONARY SYNDROME

Mariana Tinoco[1], Pedro Von Hafe[2], Geraldo Dias[2], Filipa Cardoso[2], Tâmara Pereira[2], Rogério Corga da Silva[3], Sérgio Leite[2], António Lourenço[2]

[1]Centro Hospitalar do Alto Ave, EPE/Hospital da Senhora da Oliveira. [2]Centro Hospitalar do Alto Ave, EPE/Hospital de Guimarães. [3]Unidade Local de Saúde do Alto Minho, EPE/Hospital de Santa Luzia.

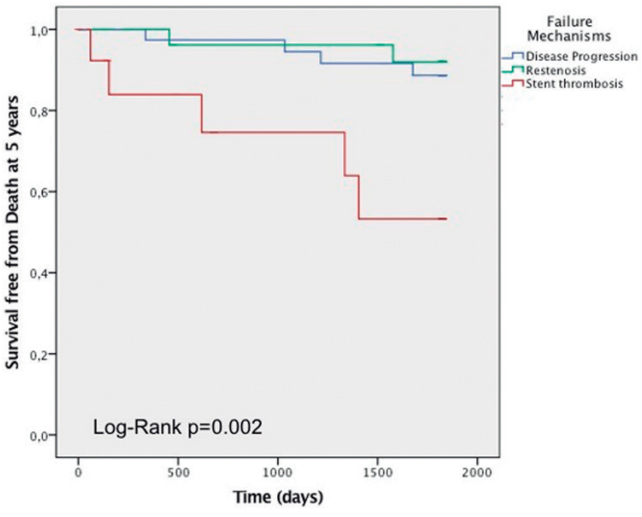
Introduction: Patients with cardiac arrest (CA) have less than 20% of survival. Although a majority of deaths due to CA occur during the initial resuscitation, a substantial proportion of CA deaths occur in patients who have been successfully resuscitated. In CA patients with suspected acute coronary syndrome (ACS), early coronary angiography (ECA) with percutaneous coronary intervention (PCI) has been associated with improved survival.
Objectives: To characterize a population who suffered CA with a presumed diagnosis of acute coronary syndrome (ACS).
Methods: Retrospective, single center study of 37 patients who suffered CA with a presumed diagnosis of ACS, between 2017 and 2020.
Results: A total of 37 patients with out-of-hospital CA and in-hospital CA were included. The population's mean age was 68 years and 70% were male. Thirty-one (83%) patients presented with chest pain suggestive of ischemic etiology. The first ECG showed ST segment elevation in 12 (32.5%), ST segment depression in 12 (32.5%), "de novo" left bundle branch block (LBBB) in 5 (13.5%), LBBB known previously in 3 (8%), nonspecific repolarization changes and pathologic T wave inversion in 5 (13.5%). Re-establishment of spontaneous circulation (ROSC) was possible in 13 (37%) patients (of whom only 3 (23%) had a non-shockable rhythm). Of these, 8 (62%) were transferred to a PCI center. The remaining 5 (38%) were considered not candidates to early coronary angiography (ECA) due to comorbidities. Six (75%) patients who were transferred were submitted to an ECA and all had PCI. At 30 days, 8 (62%) patients in whom ROSC was possible were alive. Of these, 6 (75%) had PCI. Patient selection for ECA favored male patients (83%), age under 75 (mean age 56), patients with a shockable rhythm in CA and an ECG with ST elevation on the post-ROSC ECG. Among the 24 (65%) patients who died, in 15 (62.5%) the rhythm was non-shockable.
Conclusions: The majority of deaths due to CA of ischemic etiology occur during initial resuscitation. However, more than half of those who survive are alive at 30 days. In patients with CA due to suspected ACS, the presence of shockable rhythm and early coronary angiography with PCI appears to be associated with a clear better outcome. With the limitations of the currently published literature and heterogeneity of patients presenting with CA and ACS, selecting appropriate patients for early coronary angiography remains a challenging decision.

PO 125. FAILURE OF PERCUTANEOUS CORONARY INTERVENTION AFTER ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION: WHAT HAPPENS IN 5 YEARS?

Alexandra Briosa, Mariana Martinho, Rita Calé, Ernesto Pereira, Ana Rita Pereira, Bárbara Ferreira, João Santos, Pedro Santos, Sílvia Vitorino, Catia Eusébio, Gonçalo Jácome Morgado, Cristina Martins, Rita Miranda, Helder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Percutaneous coronary intervention (PCI) is one of the most common therapeutic approaches performed worldwide. Despite continuous advances in technical performance, 20% of patients (pts) still have to be submitted to another revascularization procedure within 5 years. Studies about failure of PCI after primary angioplasty are a flaw in the literature.
Objectives: To evaluate the rate of myocardial revascularization failure (RF) in a group of pts with ST-segment elevation myocardial infarction (STEMI), admitted in a 24h/7day primary PCI center, within 5 years of follow-up (FUP), and to determine the mechanism of RF and its predictors.
Methods: Retrospective study of a single center analyzing consecutive pt submitted to primary PCI due to STEMI from 2010 to 2015. Clinical and procedure data were collected, as well as long term outcomes concerning myocardial infarction (MI), need for new revascularization and underlying mechanisms. Multivariate Cox regression analysis was used to identify predictors of PCI failure.



Results: 909 pts, 73% of the male sex, with a mean age of 63 ± 13 years old. 14% were submitted to PCI in the past and 10% had history of previous MI. Regarding first procedure characteristics: 99.1% were primary angioplasty and 0.9% PCI rescue. Revascularization was complete in 64.6% of the pts

and it was successful in 95.4% of the cases. The number of complications was extremely low (5.5%) and the most common was PCR (1.9%). During a mean follow-up (FUP) of 67.8 ± 37.6 months, 12.0% of pts needed a new revascularization (mean time to PCI of 21 ± 26 months). Of these 26.7% presented with a new MI. The most common underlying mechanism in those pts was disease progression in 46.5% of the pts, followed by restenosis in 36.4%, and stent thrombosis in 15.2%. 35.6% of pts with disease progression were submitted to other vessel revascularization, being the left anterior descendent the most common artery revascularized. Regarding stent thrombosis, more than a half of the cases were sub-acute stent thrombosis (57%), followed by acute and late chronic thrombosis (21.4%). The treatment of choice in these pts was clot aspiration followed by balloon inflation (53.5%). For our population, 5-year RF predictors were: previous history of MI (HR 2.9, 95%CI 1.44-5.75, p = 0.003) and multivessel disease (HR 2.25, 95%CI 1.44-3.51, p < 0.001).Stent thrombosis mechanism was associated with higher mortality rates compared to other mechanisms (p = 0.002, Figure).
Conclusions: A considerable proportion of pts require repeat revascularization procedure after primary PCI during 5-years FUP. The most common underlying mechanism was progression of the disease, as it was expected. Pts with history of recurrent MI and multivessel disease were identified at increase risk of failure of revascularization at long term, which suggests that they may benefit from a more aggressive preventive and surveillance strategies.

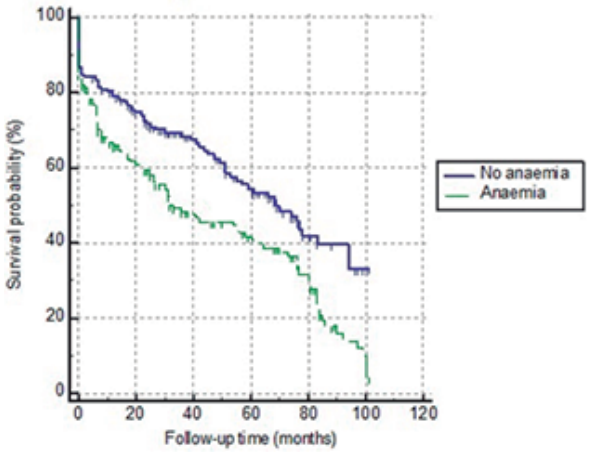
PO 126. ACUTE CORONARY SYNDROMES IN THE ELDERLY: PROGNOSTIC IMPACT OF ANAEMIA

Ana Rita M. Gomes[1], Carolina Saleiro[2], Diana de Campos[1], João Gameiro[1], José Pedro Sousa[2], Natália António[3], Lino Gonçalves[3]

[1]Centro Hospitalar e Universitário de Coimbra. [2]Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral. [3]Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: The increase in life expectancy is a reality and cardiovascular disease incidence rises with it. The elderly are fragile patients with high prevalence of multiple comorbidities. Anaemia is one of them and, in most cases, has multifactorial causes. After an acute coronary syndrome (ACS), the thrombotic versus haemorrhagic risks in these patients are hard to balance. The aim of this study is to evaluate prognostic impact of anaemia in the elderly after an ACS.
Methods: Retrospective analysis of consecutive patients admitted to a single Intensive Coronary Unit between 2009 and 2016 with the diagnosis of ACS. Patients younger than 80 years old were excluded. A complete blood count was collected upon admission and anaemia was defined for haemoglobin values below 12.5 mg/dL. Cox regression analysis and Kaplan-Meier curves were conducted to determine prognostic value of anaemia in this specific population. Multivariate analysis with other comorbidities and antithrombotic therapy was also performed.
Results: A total of 353 patients (median age of 84.0 ± 6.0 years old; 52.1% males; 51.3% with anaemia) were enrolled. In Cox regression analysis, anaemia predicted mortality (HR 1.614, 95%CI 1.199-2.172, p = 0.002). In multivariate analysis – including gender, presence of hypertension, diabetes, chronic kidney disease and atrial fibrillation (AF) at admission, anaemia proved to be an independent predictor of mortality (HR 1.521, 95%CI 1.119-2.069, p = 0.007). Adding all previous and discharge antithrombotic therapy – antiplatelet agents and oral anticoagulants – to the equation, anaemia maintained its prognostic value (HR 2.157, 95%CI 1.130-4.116, p = 0.020). Both AF and being discharged from the hospital with ticagrelor also increased mortality risk in these patients (HR 2.188, 95%CI 1.177-4.070, p = 0.130 for AF; HR 1.906, 95%CI 1.011-3.594, p = 0.046 for ticagrelor at discharge).

Figure 1. Kaplan-Meier curves for all-cause mortality with and without anaemia in the elderly with ACS



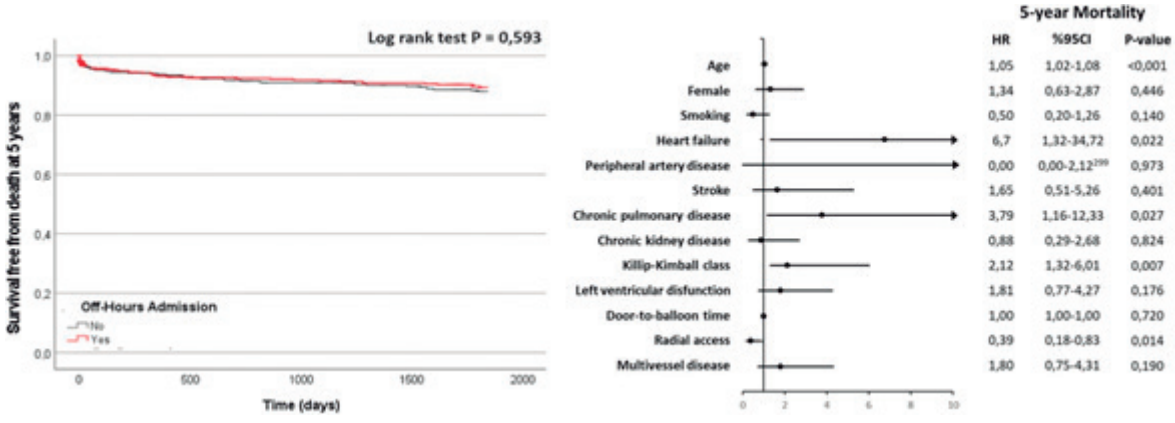
Conclusions: After an ACS, anaemia proved to be an independent predictor of mortality in the elderly. This emphasizes the importance of its adequate aetiology investigation and treatment and careful selection of antithrombotic therapy following an ACS.

PO 127. STEMI AROUND-THE-CLOCK: HOW OFF-HOURS ADMISSIONS IMPACT DOOR-TO-BALLOON TIME AND THE LONG-TERM PROGNOSIS OF ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

Mariana Martinho, Alexandra Briosa, Rita Calé, Ernesto Pereira, Ana Rita Pereira, João Grade Santos, Bárbara Ferreira, Pedro Santos, Sílvia Vitorino, Cátia Eusébio, Gonçalo Jácome Morgado, Cristina Martins, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: The outcomes of reperfusion in ST-segment Elevation Myocardial Infarction (STEMI) are time-dependent, and percutaneous



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coronary intervention (PCI) should be performed within 60 minutes from hospital admission in PCI centers – door-to-balloon time (D2B). The association between Off-Hours Admission (OHA) and long-term outcomes is controversial when considering contemporary organized STEMI networks.
Objectives: This study aims to analyze how OHA influences D2B and long-term mortality.
Methods: Retrospective study of consecutive STEMI patients (pts), admitted in a PCI-centre with a local Emergency Department, between 2010 and 2015. Pts submitted to rescue-PCI were excluded. OHA was defined as admission at night (8p.m. to 8a.m), weekends and nonworking holidays. Predictors of OHA and D2B were studied by logistic regression analysis. Demographic, clinical, angiographic and procedural variables were evaluated using stepwise Cox regression analysis to determine independent predictors of 5-year all-cause mortality (5yM). The cumulative incidence of 5yM stratified by hours of admission was calculated according to the Kaplan-Meier method.
Results: Of 901 pts, 472 pts (52.4%) were admitted during off-hours. These pts were younger (61 ± 13 vs 64 ± 12, p = 0.002) and had a lower median patient-delay time (128 min vs 157 min, p = 0.014). Clinical severity at presentation, defined by systolic arterial pressure and Killip-Kimball (KK) class, did not differ between groups. OHA did not impact D2B (89 min vs 88 min, p = 0.550), which was in turn influenced by age ≥ 75y (OR 1.85, 95%CI 1.31-2.61, p < 0.001). Mean clinical follow-up (FUP) was 68 ± 37 months, with 75.1% of pts achieving a FUP > 5 years. All-cause mortality rate at 5 years was 9.7%. After multivariate cox regression analysis, independent determinants of long-term mortality were age (HR 1.05, 95%CI 1.02-1.08, p < 0.001), previous history of heart failure (HR 6.76, 95%CI 1.32-34.72, p = 0.022) and pulmonary disease (HR 3.79, %95CI 1.16-12.33, p = 0.027), presentation with KK≥ 2 (HR 2.82, 95%CI 1.32-6.01, p = 0.007) and radial artery access in catheterization (HR 0.39, 95%CI 0.18-0.83, p = 0.014) (Figure). Although there was an association between a higher D2B time and 5yM (87 min vs 101 min, p = 0.024), neither OHA nor D2B were independent predictors of long-term mortality.
Conclusions: OHA did not seem to influence D2B and long-term STEMI outcomes in our PCI-centre. 5yM was mostly influenced by patient characteristics and clinical severity at presentation.

PO 128. GENOMIC PREDICTION OF CARDIOVASCULAR EVENTS IN A CORONARY SOUTHERN EUROPEAN POPULATION

Flávio Mendonça[1], Isabel Mendonça[2], Marina Santos[2], Margarida Temtem[2], Adriano Sousa[2], Ana Célia Sousa[2], Eva Henriques[2], Sónia Freitas[2], Mariana Rodrigues[2], Sofia Borges[2], Graça Guerra[2], António Drumond[1], Roberto Palma dos Reis[3]

[1]Hospital Central do Funchal. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]Nova Medical School.

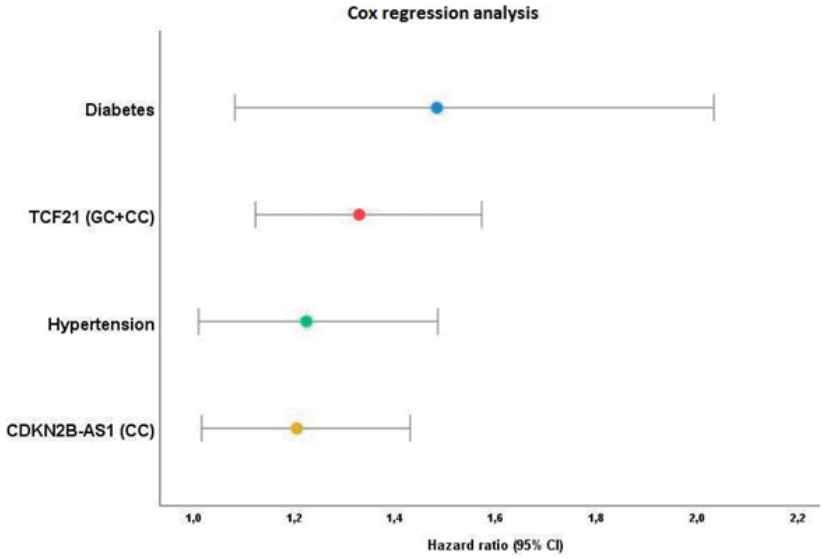
Introduction: Traditional and clinical risk factors are indicators of atherosclerosis over time and strong independent predictors of cardiovascular events, but it is unknown whether other genetic markers could provide information about the evolution of atherosclerotic coronary artery disease (CAD).
Objectives: We propose identifying the genetic predisposition to atherosclerotic plaque progression and events occurrence, through a study cohort from study population.
Methods: We performed a study with a cohort of 1.712 patients who underwent coronary angiography with more than 70% stenosis of at least one main coronary vessel, during a mean follow-up of 5 years (amplitude range 20 years). 33 SNPs associated with risk of CAD in previous GWAS, were genotyped by TaqMan assays methodology. The best model in the bivariate analysis at 95%CI with all genetic variants was generated, to investigate their association with prognostic and events occurrence. The hazard function at a set of co-variables was determined to evaluate their relationship with the event´s incidence by the Cox survival analysis regression model. Finally, we constructed Kaplan-Meier cumulative-event curves for the significant variants.
Results The analysis revealed two SNPs associated with the progression of atherosclerosis and events occurrence: rs12190287 G>C in the TCF21 gene on chromosome 10 (dominant model; OR = 1.542; 95%CI 1.069-2.224; p = 0.020) and the rs1333049 G>C in the CDKN2-AS1 gene on chromosome 9 (recessive model; OR = 1.228; 95%CI 1.001-1.518; p = 0.050). The Kaplan-Meier cumulative event curves in the TCF21 variant rs12190287 G>C showed that the GC+CC vs GG genotype was associated with a worse prognosis (log-rank test, p = 0.016) and the CDKN2B-AS1 rs1333049 G>C revealed that the CC vs GG+GC genotype also presented severe prognosis and more events at the end of the follow-up period (log-rank test, p = 0.046).
Conclusions: We have identified two SNPs associated with the prognosis of CAD, rs12190287 of TCF21 gene and rs1333049 of CDKN2-AS1 gene. Both are in non-coding enhancer regions and regulate transcriptional mechanisms shared among multiple CAD risk loci and could provide new insights into CAD`s pathophysiology identifying core mechanisms for therapeutic intervention modulating the disease risk.

PO 129. PERFORMANCE OF BLEEDING RISK SCORES IN PATIENTS WITH ACUTE CORONARY SYNDROME

João Presume, Daniel Gomes, Francisco Albuquerque, Carlos Aguiar, Marisa Trabulo, Pedro de Araújo Gonçalves, Rui Campante Teles, Manuel Almeida, Miguel Mendes, Jorge Ferreira

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Treatment for acute coronary syndrome (ACS) reduces the risk of ischemic events. Several bleeding risk scores have been proposed to



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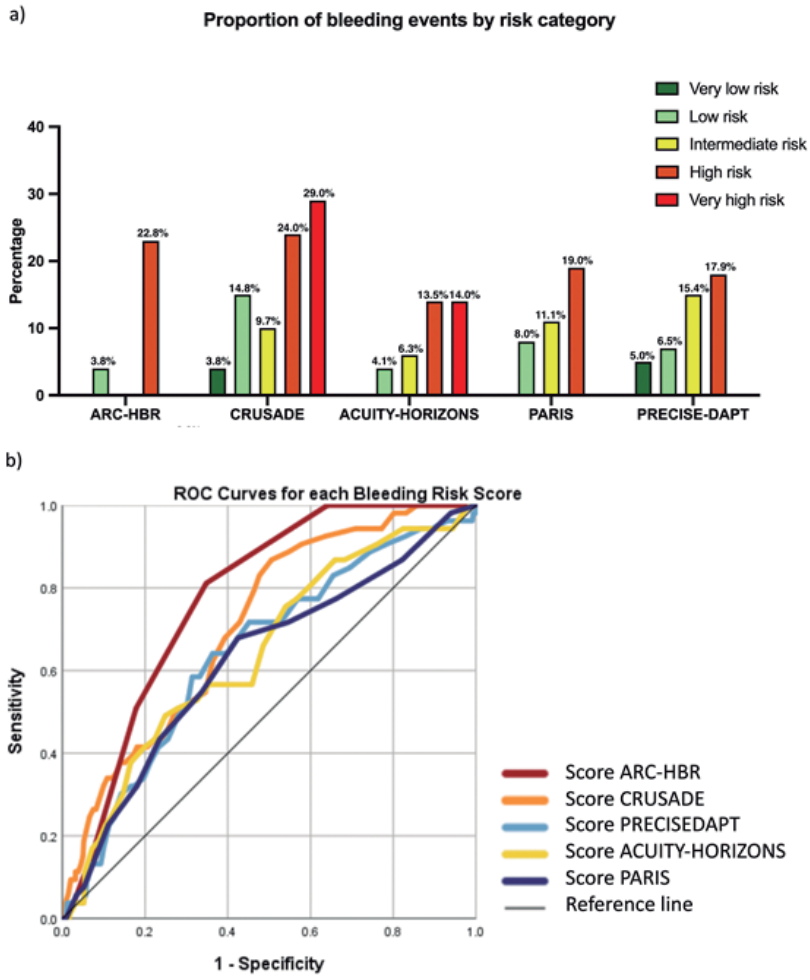

Figure 1 – a) Distribution of bleeding events at 1 year by bleeding risk categories for each score; b) Receiver operating characteristic curves of the ARC-HBR, CRUSADE, PRECISEDAPT, ACUITY-HORIZONS and PARIS scores for major bleeding events at 1 year.

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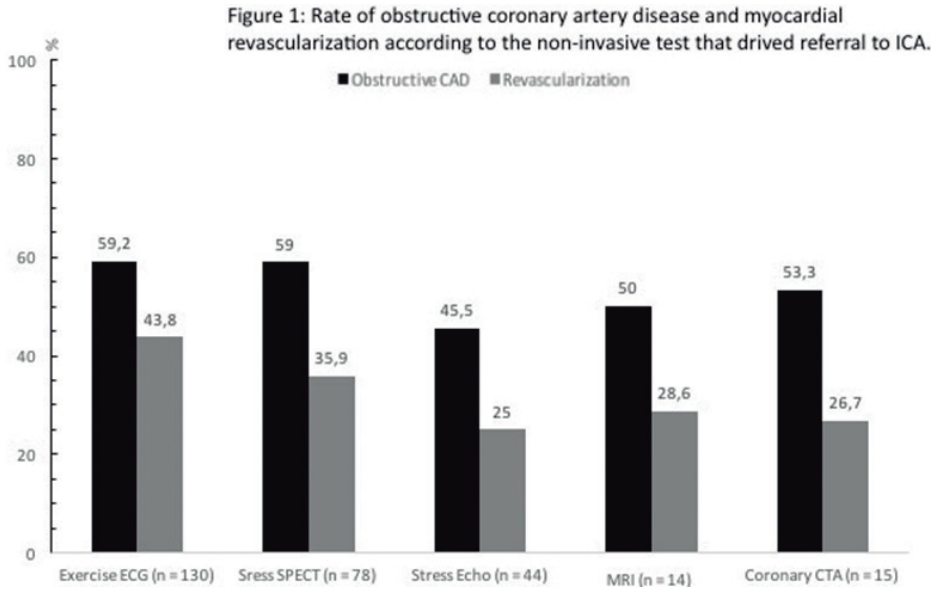
stratify and individualize antithrombotic therapy. The aim of this study was to compare the performance of the ARC-HBR, CRUSADE, ACUITY-HORIZONS, PARIS and PRECISE-DAPT risk scores in a population of patients with ACS.
Methods: We conducted a single-center retrospective study enrolling consecutive patients admitted for ACS, from January 2016 to December 2018. Risk scores were calculated based on the demographic and clinical patient's characteristics. One-year bleeding events were assessed using BARC (Bleeding Academic Research Consortium) classification.
Results: A total of 515 patients (mean age 65 ± 14 years, 72% male) were included in the analysis. A total of 58 hemorrhagic events occurred during the first year of follow-up: 33 BARC 3a (56.9%), 23 BARC 3b (39.7%), 1 BARC 3c (1.7%), and 1 BARC 5 (1.7%). Most bleeding events occurred in the first 30 days (83%). Rates of bleeding events (BARC ≥ 3a) for each risk group are represented in figure 1a. In the C-Statistic analysis, discrimination of ARC-HBR and CRUSADE was good (AUC 0.777, and 0.697 respectively), but poor in the other risk scores (AUC ACUITY-HORIZONS 0.645; AUC PRECISE-DAPT 0.644; AUC PARIS 0.625). The discriminative ability of ARC-HBR was superior to ACUITY-HORIZONS, PRECISE-DAPT, and PARIS (z = 2.330 - p = 0.020; z = 2.363 - p = 0.018; z = 2.741 - p = 0.006; respectively) but not significantly different in comparison to CRUSADE (z = 1.465, p = 0.143). No significant differences were found between the other models.
Conclusions: The great majority of bleeding events occurred in the first 30 days after admission acute coronary syndrome. Our findings suggest that ARC-HBR bleeding risk score performs better than most other bleeding risk scores.

PO 130. DIAGNOSIS OF CHRONIC OBSTRUCTIVE CORONARY ARTERY DISEASE: IS NON-INVASIVE TESTING THE SUITABLE GATEKEEPER FOR CORONARY ANGIOGRAPHY?

Fernando Mané, Carla Rodrigues, Cátia Oliveira, Rui Flores, Paulo Medeiros, Rodrigo Silva, Isabel Campos, João Costa, Carlos Braga, Catarina Quina, Jorge Marques

Hospital de Braga.

Introduction: The prevalence of patients without obstructive coronary artery disease (CAD) among those undergoing invasive coronary angiography (ICA) is significant. Identifying patients that will benefit from an invasive approach is essential to avoid unnecessary risks and costs. Current guidelines advocate the use of non-invasive tests to establish CAD diagnosis according to its clinical likelihood, with the majority of patients being eligible to undergo a functional non-invasive imaging test for myocardial ischemia before ICA is considered.
Objectives: The authors aim to describe the patterns of non-invasive testing among patients undergoing ICA and to determine their incremental value in current practice.
Methods: Characteristics and results of 358 consecutive patients without known CAD undergoing ICA in a signle-centre were collected. We evaluated the prevalence of obstructive coronary disease (defined as the presence



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of at least one ≥ 50% stenosis on ICA) according to the use of non-invasive testing and compared the results with the patients referred to ICA without a positive non-invasive test.

Results: Non-invasive testing was performed in 79% of the patients. The baseline characteristics of the patients that underwent non-invasive testing were not significantly different from those referred to ICA without previous testing. Rates of obstructive CAD and myocardial revascularization according to the positive non-invasive test that drived referral to ICA are illustrated (Figure). The prevalence of obstructive coronary disease was significantly higher in patients that underwent non-invasive testing than in those who did not (56% vs 40%, p = 0.01). A positive non-invasive test was marginally associated with increased risk of obstructive CAD (adjusted odds ratio 1.73 CI95% [0.95-2.98], p = 0.07) and had modest Incremental value in the prediction of obstructive CAD when included in a multivariate regression model based in clinical characteristics (C-statistic of 0.733 vs. 0.727). Furthermore, non-invasive testing was associated with higher rates of revascularization when compared with non-tested patients (37% vs 21%, p = 0.01).

Conclusions: Non-invasive tests are able to improve the coronary angiography diagnostic yield by fairly performing as gatekeepers. However, the current diagnosis pathway leading to ICA underperforms despite the widespread testing. Hence, complementary risk-stratification strategies are needed to avoid futile procedures.

PO 131. ON- VS OFF-HOURS PRIMARY PERCUTANEOUS CORONARY INTERVENTION: A SINGLE-CENTRE EXPERIENCE

Fernando Ribeiro Mané[1], Cátia Oliveira[1], Rui Flores[1], Paulo Medeiros[1], Carla Rodrigues[1], Isabel Campos[1], Rodrigo Silva[1], Ana Sofia Ferreira[2], João Costa[1], Catarina Quina[1], Carlos Braga[1], Jorge Marques[1]

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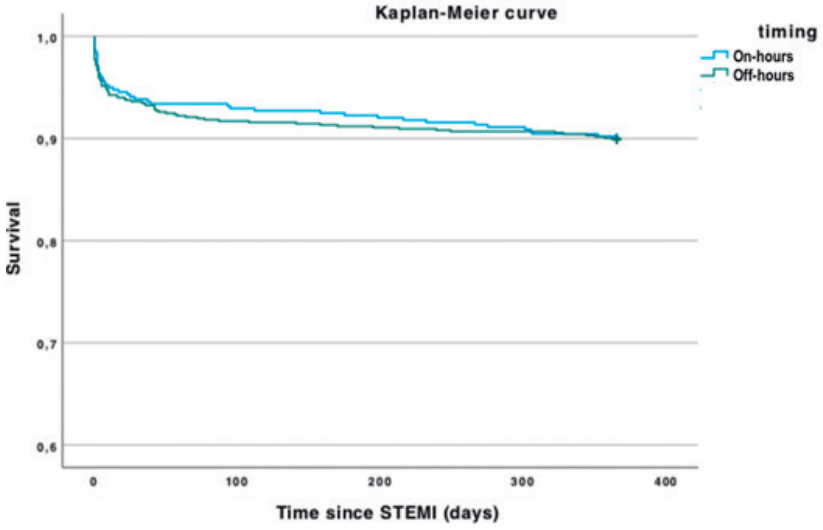
Introduction: In ST-segment elevation myocardial infarction (STEMI) patients, emergency medical system delays importantly affect outcomes. The effect of admission time in STEMI patients is dubious when percutaneous coronary intervention (PCI) is the preferred reperfusion strategy.

Objectives: The authors aimed to retrospectively describe the association between admission time and STEMI patient's care standards and outcomes.

Methods: Characteristics and outcomes of 1,222 consecutive STEMI patients treated in a PCI-centre were collected. On-hours were defined as admission



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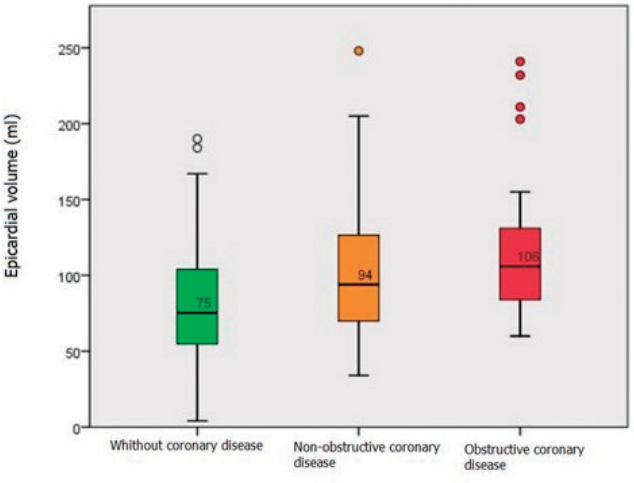
on non-national-holidays from Monday to Friday from 8 AM to 6 PM. Time delays, in-hospital and one-year all-cause mortality were assessed.
Results: A total of 439 patients (36%) were admitted on-hours and 783 patients (64%) were admitted off-hours. Baseline characteristics were well-balanced between groups, including the percentage of patients admitted in cardiogenic shock (on-hours: 4.6% vs off-hours 4%; p = 0.62). Median emergency system dependent time to reperfusion (i.e. first-medical contact to reperfusion) did not differ between the two groups (on-hours: 120 min vs. off-hours 123 min, p = 0.54). The authors observed no association between admission time and in-hospital mortality (on-hours: 5% vs. off-hours 4.9%, p = 0.90) or 1-year mortality (on-hours: 10% vs. off-hours 10%, p = 0.97). In patients admitted directly in the PCI-centre, median time from first-medical contact to reperfusion (on-hours: 87 min vs off-hours: 88 min, p = 0.54), in-hospital mortality (on-hours: 4% vs off-hours: 7%, p = 0.30) and 1 year mortality (on-hours: 9% vs off-hours: 13%, p = 0.27) did not differ between the two groups.. Survival analysis showed no survival benefit of on-hours PCI over off-hours PCI (HR 1.01; 95%CI [0.77-1.46], p = 0.95).
Conclusions: In a contemporary well-organized emergency network, STEMI patients admission time in the PCI-centre was not associated with reperfusion delays or increased mortality.

PO 132. QUANTIFICATION OF EPICARDIAL FAT WITH CARDIAC CT AND ASSOCIATION WITH CARDIOVASCULAR RISK FACTORS AND OBSTRUCTIVE CORONARY DISEASE

Tânia Mano, José Viegas, João Pedro Reis, Alexandra Castelo, Pedro Brás, Isabel Cardoso, André Grazina, Luísa Figueiredo, Rúben Ramos, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Recent studies advocate epicardial fat (EF) as a biologically active organ that influence coronary atherosclerosis development through endocrine and paracrine pathways. We aim to study the relations between EF, thoracic adipose tissue (TAT), cardiovascular risk factors (CRF) and obstructive coronary disease (OCD).



Graphic 1. Boxplot that illustrates increasing values of epicardial volume (ml) according to atherosderotic coronary burden, measured with 64-multislice cardiac computed tomography.

Methods: Retrospective analysis of patients (pts) referred to 64-multislice cardiac computed tomography (CT) in one center. The authors underwent a standardized protocol for quantification of EAT, TAT (subcutaneous and visceral), abdominal visceral fat, coronary calcium score and angiography.
Results: Total of 178 pts: male 99 (56%), mean age 65.9 ± 12.9 years. Indications for performing CT were coronary disease (76%), valvular heart disease (15%), atrial fibrillation (6%) and congenital heart disease (2%). Regarding CRF, EF was only significant higher in patients with diabetes (115 ± 60 vs 95 ± 47, p = 0.018), in male gender (114 ± 60 vs 91 ± 42, p = 0.04) and was linear correlated with age (p = 0.004). The authors also found that EF volume is significant higher in patients with typical angina (p = 0.02) and with coronary atherosclerosis: non-obstructive (p = 0.0049) and OCD (p = 0.001) (Figure). ROC analysis of EF (AUC 0.659, p = 0.0039) and EF/TAT relation (AUC 0.704, p = 0.003) allowed to estimate that EF > 100 ml and EF/TAT > 0.06 had a sensibility to predict OCD of 53% and 58%, respectively, and specificity of 66% and 60%. We did not find a correlation between EF, EF/TAT or TAT and coronary calcium score.
Conclusions: EF is higher in patients with diabetes and coronary atherosclerosis. EF and EF/TAT relation had moderate sensibility and specificity to predict OCD, irrespective of calcium score. EF and EF/TAT are promising atherosclerotic markers that could be routinely use in the near future.

PO 133. ANOMALOUS ORIGIN OF THE CORONARIES ARTERIES – EXPERIENCE OF A LARGE VOLUME CENTER ENCOMPASSING OVER 25 YEARS

Tiago Rodrigues[1], Pedro Carrilho Ferreira[1], Miguel Nobre Menezes[1], Nelson Cunha[1], Catarina Oliveira[1], Beatriz Garcia[1], Ana Margarida Martins[1], Sara Pereira[1], Pedro Silvério António[1], Cláudia Jorge[1], Ana Rita Francisco[1], João Marques[1], Fausto J. Pinto[1], Pedro Pinto Cardoso[1]

[1]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Anomalous origin of the coronary arteries is a rare congenital condition that may sometimes be associated with significant morbidity and mortality, especially in younger patients. There are few data reporting the characterization and possible risk associations of this disorder.
Objectives: To describe the anatomical characteristics of anomalous origin of the coronaries arteries and their prognosis implications.
Methods: Single-centre retrospective study of all patients submitted to diagnostic coronariography in a university hospital between 1993 and 2020. Coronariography findings and clinical parameters were analyzed, and their association with long-term prognosis was determined by Cox regression analysis. Two endpoints were used: all-cause mortality, myocardial infarction and arrhythmic events.
Results: A total of 47,573 coronary angiograms from 40,129 patients were performed. Angiographic findings of 29,534 patients (62.1% of the total; 65.7% male; age 64 ± 12 years) were available for analysis. The overall prevalence of anomalous origins of the coronary arteries was 1.43% (n = 423). The most common anomalies were the following: separate origin of the left anterior descending and circumflex arteries (0.78% - n = 130); origin of the circumflex artery from the right sinus of Valsalva (0.11% - n = 32); origin of the right coronary artery from the left sinus of Valsalva (0.20%, n 59). Anomalous origins of the left main or left anterior descending artery from the right sinus of Valsalva were very rare (0.07% - n = 21 and 0.03% -n = 9, respectively) as were anomalous origin of the right coronary artery from circumflex and circumflex from right coronary artery (0.003% - n = 1 and 0.03% - n = 9, respectively). Patients with anomalous origins were predominantly male (68.7%), with a mean age of 63 ± 11 years, and the most common reasons for performing coronariography were stable angina (31.6%), NSTEMI-ACS (31.2%) and STEMI (12.1%). The mean follow-up time was 34 ± 34 months, and the all-cause mortality rate was 16.3% and cardiovascular death was 1.6%. No variant of anomalous origin was associated with long-term prognosis (all cause mortality, myocardial infarction or arrythmic event), even though an anomalous origin of the right coronary artery was associated with an increased rate of PCI of the involved vessel [hazard ratio (HR) = 1.41; 95%CI 1.04-1.73; p = 0.001].
Conclusions In this study anomalous origin of the coronary arteries was a relatively common finding on coronary angiography. No single anomaly was associated with worse long-term prognosis, namely mortality, possibly due to the small incidence of high-risk cases, as well as therapeutic intervention when indicated. However, an anomalous origin of the right coronary artery was associated with increased PCI due to progression of atherosclerosis disease. Separate origin of the left anterior and circumflex arteries was the most common finding.

PO 134. EXERCISE ECHOCARDIOGRAPHY IN PATIENTS WITH SUSPECTED OR KNOWN CORONARY ARTERY DISEASE – IS THERE STILL A ROLE FOR ELECTROCARDIOGRAPHIC CHANGES?

Mário Lourenço, Ana Filipa Cardoso, Filipa Castro, Pedro Von Hafe, Tâmara Pereira, Marina Fernandes, Olga Azevedo, Isabel Nogueira, António Lourenço

Centro Hospitalar do Alto Ave, EPE/Hospital da Senhora da Oliveira.

Introduction: Exercise echocardiography (EE) is a useful method for diagnosis and risk stratification in patients (pts) with suspected or known coronary artery disease (CAD). There has been a growing scientific consensus that imaging stress tests should be preferred over ECG stress tests in these pts whenever available. Our aim was to assess if the presence of electrocardiographic changes has any role on predicting outcomes when there are no changes in ventricular wall motion in EE.
Methods: Single-center retrospective study of consecutive patients with suspected or known CAD who performed an EE between 2018 and 2019 and had a negative result for myocardial ischemia. Clinical, electrocardiographic and echocardiographic data were collected. The primary endpoint was a composite of admission for acute coronary syndrome (ACS), coronary revascularization and cardiovascular death during the follow-up.
Results: A total of 79 pts were included (mean age 59 ± 9 years; 67% male). The two main indications for performing EE in these patients were new onset chest pain (33 pts; 42%) and previous positive ECG stress test (26 pts; 33%). 20 pts (26%) had electrocardiographic changes suggestive of ischemia during exercise, despite having no alterations in ventricular wall contractility. There were no differences in exercise time (9.6 ± 2.9 vs 9 ± 1.9 minutes, p = 0.429), nor in mean METS achieved (10.6 ± 2.4 vs 10.2 ± 1.6, p = 0.446) between these two groups. During a median follow up of 22 months (IQR 15-28), the primary endpoint did not occur in any patient, regardless of electrocardiographic changes during exercise.
Conclusions: The prognosis of patients with negative EE was excellent, as these patients did not suffer cardiovascular events in the follow-up. The occurrence of electrocardiographic changes suggestive of ischemia during EE were not relevant to further stratify the risk of coronary events in these patients. These findings reinforce that EE has a higher prognostic value than ECG stress test in patients with suspected or known CAD.

PO 135. CORONAVIRUS DISEASE 2019 (COVID-19) IN THE HEART TRANSPLANT POPULATION: A SINGLE-CENTER EXPERIENCE

M. Raquel Santos[1], Bruno Rocha[2], Catarina Brízido[2], Gonçalo Cunha[2], Sérgio Maltês[2], Christopher Strong[2], António Tralhão[2], Carlos Aguiar[2], Miguel Mendes[2]

[1]Hospital Dr. Nélio Mendonça. [2]Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: The worldwide spread of the novel coronavirus disease 2019 (COVID-19) pandemic has created unprecedented challenges in the diagnosis and medical treatment of affected patients as well as in public health management. Data on the clinical course of infection with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in heart transplant recipients are scarce. Immunosuppression-related issues present the main concern in this special population.
Objectives: To describe our experience with transplanted patients who developed this disease.
Methods: Six patients developed the novel 2019 coronavirus disease. Data on demographic features, last follow-up characteristics, immunosuppressive therapy, onset presentation and need for hospitalization were collected for these patients.
Results: The median age was 48.8 years (IQR 30-40) and 50% of the patients were male. Among the patients' risk factors arterial hypertension and past smoking were the most frequent, occurring in 50%. The median glomerular filtration rate was 68 ml/min/1.73 m^2 (IQR 45-114). Five patients were on a triple immunosuppressive therapy regimen. All patients were symptomatic and had positive results from a nasopharyngeal swab test for SARS-CoV-2. Just one presented fever. Of the six patients, only two required hospitalization: one patient was admitted to an intensive care unit for 86 days and the other to a general ward for 35 days. The former patient developed severe pneumonia and respiratory failure requiring invasive mechanical ventilation, acute renal failure requiring hemodialysis, and was discharged to a rehabilitation unit. During hospitalization, immunosuppressive therapy was modified and down-titrated in both patients. At the last follow-up, all patients are alive and have preserved graft function.
Conclusions: In this small cohort of heart transplant recipients infected by SARS-CoV-2, a third required hospitalization, but all survived. Immunosuppression was down-titrated in patients requiring hospitalization.

PO 136. PREDICTORS OF MECHANICAL COMPLICATIONS AFTER ACUTE MYOCARDIAL INFARCTION- A LARGE RETROSPECTIVE STUDY

José João Monteiro[1], Sara Borges[1], Pedro Rocha Carvalho[1], Hélder Ribeiro[1], Catarina Ribeiro Carvalho[2], Marta Bernardo[1], Miguel Moz[1], José Pedro Guimarães[1], Fernando Fonseca Gonçalves[1], Ilídio Moreira[1]

[1]Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real. [2]Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Bragança.

Introduction: The development of mechanical complications (MC) after an acute coronary syndrome (ACS) is rare but associated with a reduction of short-term and long-term survival. The common underlying mechanism involves excessive, transmural myocardial necrosis followed by the rupture or extensive scarring of the affected tissue.
Objectives: To study potential predictors of MC in order to anticipate these potential lethal complications.
Methods: Retrospective study based on the Portuguese National Registry of ACS, including patients (pts) hospitalized with this diagnoses between October 2010 and January 2019. Papillary muscle rupture, interventricular communication and septum rupture were considered. Patients with previous acute myocardial infarction (AMI), percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG) were excluded. Logistic regression was used to verify possible predictors of MC.
Results: After exclusion criteria, 13,665 pts were analised: 71.5% male, age 65 ± 14 years, 50.5% with ST segment elevation AMI (STEMI), 47% non-ST segment elevation AMI (NSTEMI) and 2.5% with undetermined location AMI. There were a total of 119 (0.9%) patients that developed MC after ACS. Hypertension (64.3%), dyslipidemia (51.6%), smoking (31.7%) and diabetes (27.0%) were the most frequent comorbidities. Logistic regression showed a positive correlation between post-ACS MC and age > 75 (OR 2.92, p < 0.001), hypertension (OR: 2.1, p = 0.051), left anterior descending artery (LAD) stenosis > 50% (OR 2.22, p = 0.031) and use of GP 2b/3a inhibitors (OR 3.11, p = 0.033). STEMI vs NSTEMI (OR 3.73, p < 0.001), as well as time between symptoms and first medical contact > 120 minutes (OR 2, p = 0.002) weren't independent predictors of MC, in spite of statistic significance in univariate analysis.
Conclusions: In this study, positive predictive factors for MC after ACS were identified: Older Age, Hypertension, Significative LAD disease and infarct-related artery with High Thrombotic Burden.

PO 137. THE IMPACT OF HAEMOGLOBIN VARIATION IN PATIENTS WITH ACUTE CORONARY SYNDROME

Eric Alberto Monteiro[1], José Pedro Barbosa[2], Joana Guimarães[1], Diogo Fernandes[1], Gonçalo Costa[1], Ana Rita M. Gomes[1], Carolina Saleiro[1], Diana Campos[1], José Pedro Sousa[1], João Lopes[1], Luís Puga[1], Rogério Teixeira[1], Carolina Lourenço[1], Marta Madeira[1], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra. [2]MEDCIDS, FMUP-Department of Community Medicine, Information and Decision in Health, University of Porto, Faculty of Medicine.

Introduction: Antiplatelet and anticoagulants are one of the mainstay treatment of acute coronary syndrome (ACS), however they are associated with a significant increase of bleeding risk. While anaemia is a recognized

predictor of adverse outcomes, it is unknown if a variation of haemoglobin (HB) levels, even without associated anaemia, has the same impact. The aim of this study was to determine the prognostic impact of HB variation after percutaneous coronary intervention (PCI) in ACS patients.
Methods: Retrospective analysis of 822 consecutive patients admitted due to ACS and treated with PCI, in a single coronary intensive care unit. Delta HB - ΔHB - (HB at admission - HB 24 hours after PCI) was calculated. Clinical variables and therapeutic strategies were examined. The primary endpoint analysed during follow-up was all-cause mortality. Possible predictors for all-cause mortality were assessed by Cox regression models. When statistically significant values were found in univariate analysis, multivariate analysis was used to determine whether ΔHB was independent from other known factors in predicting the outcome.
Results: In the studied sample, 75.4% were male. Mean age was 66.4 ± 13.1. ST-elevation myocardial infarction (STEMI) occurred in 45.5%, non-ST segment elevation myocardial infarction in 42.6% and unstable angina in 11 9% of the studied population. Moderate to severe systolic dysfunction was present in 23.5% of the cases. Regarding comorbidities and past medical history, 76% had hypertension (HTN), 30.3% diabetes, 16.4% chronic kidney disease (CKD), 62.2% dyslipidaemia and 10.5% heart failure (HF). Mean HB at admission was 13.8 ± 1.8 g/dL, mean HB after PCI was 12.9 ± 1.9 g/dL and mean ΔHB was 0.9 ± 1.1 g/dL. The mean follow-up was 51.6 ± 30.6 months. In univariate analysis, ΔHB was significantly associated with all-cause mortality (HR 1.15 per 1 g/dL loss, 95%CI 1.01-1.30, p = 0.04), as was HB at admission, HB after PCI, age, sex, diabetes, HTN, dyslipidaemia, CKD and moderate to severe systolic dysfunction. In multivariate analysis, ΔHB remained significantly associated with the endpoint and gained even more statistical power (HR 1.25, 95%CI 1.10-1.43, p < 0.01). HB at admission and after PCI, age, CKD and moderate to severe systolic dysfunction were also independent predictors of this outcome.
Conclusions: In our study, irrespective of the admission and discharge HB, ΔHB was associated with more adverse outcomes in patients submitted to PCI. Hence, even patients with a normal HB after PCI have a worse long-term prognosis if a negative variation of HB occurs. This highlights the importance of identifying and optimising all the correctable factors that might lead to an increased bleeding risk.

PO 138. PROGNOSTIC IMPACT OF WORSENING RENAL FUNCTION PARAMETERS IN PATIENTS WITH ACUTE CORONARY SYNDROME

João Presume, Daniel Gomes, Francisco Albuquerque, Christopher Strong, Marisa Trabulo, Pedro de Araújo Gonçalves, Rui Campante Teles, Manuel Almeida, Miguel Mendes, Jorge Ferreira

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Baseline renal function, one of the parameters included in the GRACE score, has prognostic relevance in patients admitted for acute coronary syndrome (ACS). The aim of this study was to compare different worsening renal function (WRF) parameters during hospitalization for ACS and their impact on all-cause mortality. Furthermore, we aimed to assess if these parameters had any incremental prognostic value in addition to the GRACE score.
Methods: We conducted a single-center retrospective study enrolling consecutive patients admitted for ACS from January 2016 to December 2018. Estimation of glomerular filtration rate (eGFR) for each patient was calculated based on the CKD-EPI formula. WRF during hospitalization was assessed by means of: serum creatinine (sCr) elevation ≥ 0.3mg/dL, duplication of the sCr value or maximum sCr value ≥ 2.0 mg/dL.

Table 1 – Prevalence of the different worsening renal function parameters in our cohort and their predictive value for all-cause mortality during follow-up, after hospitalization for acute coronary syndrome.

	Prevalence – n (%)	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Death during follow-up (n=84)	p-value
Creatinine level raise ≥ 0.3 mg/dL	210 (37.8%)	0.667	0.673	0.267	0.919	56	<0.001
Duplication of Creatinine level during hospitalization	35 (6.3%)	0.214	0.964	0.514	0.873	18	<0.001
Maximum Creatinine level ≥ 2.0 mg/dL during hospitalization	64 (11.5%)	0.440	0.943	0.578	0.904	37	<0.001

sCr – serum creatinine

Table 2 – Added prognostic value of individual worsening renal function parameters for all-cause mortality, on a multivariate Cox regression analysis;

	Parameter	HR (95% CI)	p-value
1	GRACE score	1.024 (1.016-1.033)	<0.001
	Raise of sCr ≥ 0.3 mg/dL	2.252 (1.393-3.641)	0.001
2	GRACE score	1.026 (1.018-1.034)	<0.001
	Duplication of sCr during hospitalization	3.194 (1.864-5.474)	<0.001
3	GRACE score	1.019 (1.011-1.028)	<0.001
	Maximum sCr during hospitalization ≥ 2.0 mg/dL	4.872 (3.012-7.880)	<0.001

sCr – serum creatinine

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Results: A total of 555 patients were included (65 ± 13 years old, 72% male). Overall, 402 (72%) had hypertension, 167 (30%) were diabetic, 88 (16%) had left ventricular ejection fraction < 40%. Mean GRACE score was 102.7 ± 29.1 and median sCr at baseline was 0.83 mg/dL [0.70; 0.97]. Median length of hospitalization was 4 days [2; 10] and the mean follow-up of 963 days. Baseline eGFR showed significant correlation with mortality during follow-up (HR 0.742 [95%CI 0.691-0.797] per 10 mL/min/1.73 m^2 increase in eGRF). Moreover, all WRF parameters showed significant association with all-cause mortality during follow-up on a univariate analysis - p < 0.001 (Table 1). Elevation of sCr ≥ 0.3 mg/dL during hospitalization was the most frequent WRF parameter (210 patients - 38%) and the most sensitive parameter to predict our endpoint, occurring in 56 patients who died during follow-up (sensitivity 66.7%). Both duplication of sCr and absolute sCr ≥ 2.0 mg/dL during hospitalization showed a lower prevalence; however, the majority of patients with one of these findings died during follow-up (51.4% and 68.5%, respectively). On a multivariate Cox regression analysis, adjusted for the GRACE score, all individual WRF parameters remained independently associated with all-cause mortality during follow up (Table 2).
Conclusions: Worsening renal function has significant prognostic impact in patients admitted for ACS. Identification of these parameters during hospitalization adds significant value to the prognostic stratification of the GRACE score.

PO 139. WHAT IS THE PROGNOSTIC IMPACT OF INFLAMMATION IN ACUTE CORONARY SYNDROME?

Eric Alberto Monteiro[1], José Pedro Barbosa[2], Joana Guimarães[1], Diogo Fernandes[1], Gonçalo Costa[1], Ana Rita M. Gomes[1], Carolina Saleiro[1], Diana Campos[1], José Pedro Sousa[1], João Lopes[1], Luís Puga[1], Rogério Teixeira[1], Carolina Lourenço[1], Marta Madeira[1], Lino Gonçalves[1]

[1]Centro Hospitalar e Universitário de Coimbra. [2]MEDCIDS, FMUP-Department of Community Medicine, Information and Decision in Health, University of Porto, Faculty of Medicine.

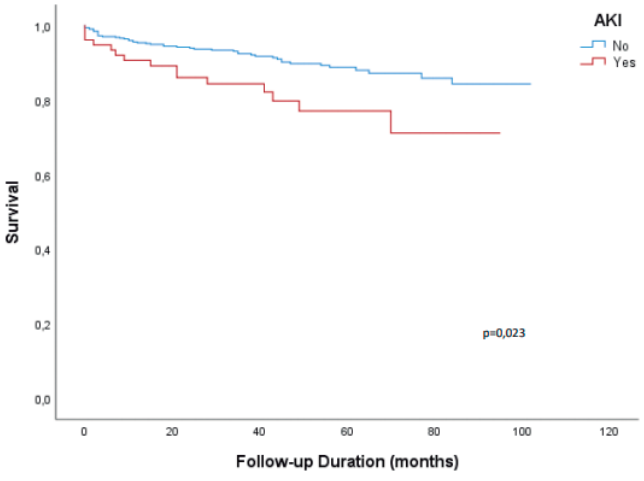
Introduction: In patients with acute coronary syndrome (ACS) the acute phase reactant, C-reactive protein (CRP), might be significantly elevated. Several reports suggest that CRP may play a direct pathophysiological role on the development and progression of atherosclerosis, and CRP values correlate with infarct size when measured by magnetic resonance imaging. The aim of the present study was to evaluate the prognostic value of CRP in patients presenting with an ACS.
Methods: Retrospective analysis of 635 consecutively admitted patients due to ACS in a single coronary intensive care unit. CRP levels were measured at admission. Clinical variables and therapeutic strategies were examined. The primary endpoint analysed during follow-up was all-cause mortality. Possible predictors for all-cause mortality were assessed by Cox regression models. When statistically significant values were found in univariate analysis, multivariate analysis was used to determine whether CRP was an independent predictor of outcome.
Results: In the studied sample, 75% were male. Median age was 69 [interquartile range (IQR) 57-78]. ST-elevation myocardial infarction (STEMI) occurred in 39.6%, non-ST segment elevation myocardial infarction in 44.9% and unstable angina in 15.5% of the patients. Median left ventricular ejection fraction (LVEF) was 48% (IQR 40-55%) and median CRP level at admission 0.7 mg/dL (IQR 0.5-1.9 mg/dL). Regarding important comorbidities and past medical history, 75.9% had hypertension (HTN), 34.0% diabetes, 20.3% chronic kidney disease (CKD), 68.6% dyslipidaemia and 17.3% heart failure (HF). The median follow-up was 34 months (IQR 22-72). In univariate analysis, CRP was significantly associated with all-cause mortality (HR 1.06 per 1 mg/dL increase, 95%CI 1.04-1.08, p < 0.001), as was gender, age, LVEF, STEMI and previous history of diabetes, HTN, CKD or HF. In multivariate analysis, CRP remained significantly associated with the primary endpoint (HR 1.02, 95%CI 1.00-1.05, p = 0.033), as did age, LVEF and previous history of HF.
Conclusions: In our study, CRP at admission was an independent risk factor for all-cause mortality following an ACS. This finding indicates that inflammation associated with the acute event has a significant impact in the long-term prognosis. More evidence is needed to determine if treating inflammation (and when, in the course of the disease) could result in better outcomes.

PO 140. PROGNOSTIC IMPACT OF ACUTE KIDNEY INJURY IN MAJOR BLEEDING IN ACUTE CORONARY SYNDROME PATIENTS

Pedro Rocha Carvalho, Sara Borges, José João Monteiro, Catarina Carvalho, Marta Bernardo, Joaquim Chemba, Paulo Fontes, Ilidio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Acute kidney injury (AKI) is a well-known marker of adverse events in acute coronary syndrome (ACS) patients. Its role in predicting bleeding risk is not well established.
Methods: Retrospective study of ACS patients admitted to a single center, between October/2011 and September/2018. Patients on dialysis were excluded. Serum creatinine at the admission and maximum value during hospitalization were recorded. KDIGO criteria were used for the definition of AKI (Increase in SCr by > 0.3 mg/dl within 48 hours; or > Increase in SCr to x1.5 times baseline, which is known or presumed to have occurred within the prior 7 days; or Urine volume 0.5 ml/kg/h for 6 hours). The primary endpoint was major bleeding during follow-up, using the International Society on Thrombosis and Haemostasis criteria.
Results: 570 patients were included in the analysis - mean age 66.1 ± 13.1 years; 74.9% males; 42.6% STEMI (ST-Elevation Myocardial Infarction). During hospitalization 12.3% of patients had AKI. These patients had more comorbidities: arterial hypertension (80.5 vs 61.3%; p < 0.05) and arterial peripheral disease (8.6 VS 2.6% e p < 0.05), but similar bleeding history (3.9% vs 2.2%; p = 0.366), prior ACS (13.9 vs 12, p = 0.623), significant renal disease (glomerular filtration rate < 45 ml/min) (17% vs 12.7 p = 0.332) and previous atrial fibrillation (7.1 vs 6.4%, p = 0.838). At admission pts with AKI had lower Hg levels (p = 0.047). Platelets levels, acute heart failure [Killip Class > 1 (18.1 vs 14, p = 0.346)], STEMI (50.7 vs 45.8, p = 456), multi-vessel disease (MVD) and angioplasty was similar in both groups (59.3% vs 66.2%, p = 0.1 for MVD and 67.5% vs 76.5%, p = 0.1 for angioplasty). At discharge there were no differences in anthytrombotic therapy. During a median follow-up of 41 months (IQR: 20-59), 91 patients (15.8%) died and 62 (10.7%) had major bleeding. Acute kidney injury was a predictor of major bleeding (HR 1.777 95%CI: 0.99-3.19; p = 0.054) even after adjusting for anemia and arterial peripheral disease.



Conclusions: Pts with ACS who develop AKI during hospitalization had higher risk of major bleeding. Thus this should be considered in the bleeding risk estimation as may impact on antithrombotic therapy.

PO 141. CAN PULMONARY ARTERY SYSTOLIC PRESSURE PREDICT OUTCOMES IN PATIENTS WITH ACUTE CORONARY SYNDROMES?

Joana Guimarães[1], José Pedro Barbosa[2], Eric Monteiro[1], Diogo Fernandes[1], Gonçalo Costa[1], João Rosa[1], Gustavo Campos[1], Ana Sofia Martinho[1], José Paulo Almeida[1], André Azul Freitas[1], Cátia Ferreira[1], James Milner[1], João Ferreira[1], Carolina Lourenço[1], Graça Castro[1], Lino Gonçalves[1]

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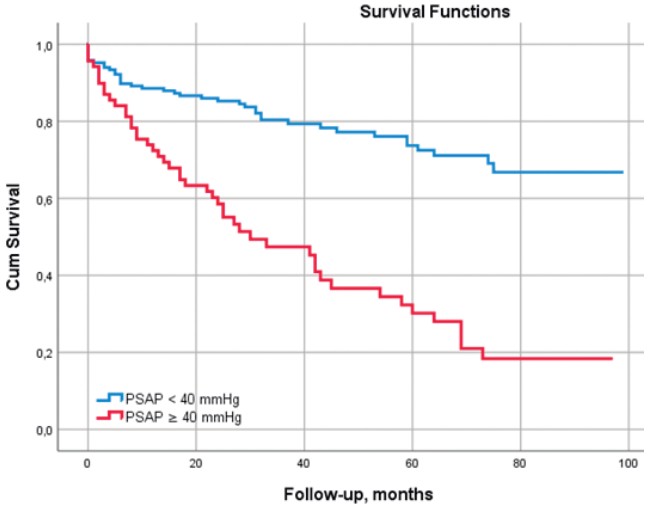
Introduction: It is known that pulmonary artery systolic pressure (PASP) in acute coronary syndrome (ACS) may increase as a result of cardiac alterations that lead to increased filling pressures. Nevertheless the impact of this association with prognosis is poorly defined. The aim of the study was to evaluate the prognosis significance of a higher PASP detected at the time of ACS.
Methods: We conducted a retrospective study of patients with ACS admitted to a single coronary intensive care. Echocardiography was performed within 2 days of admission and pulmonary artery systolic pressures estimated. The patients were then divided in 2 groups: group 1 (G1) with PASp < 40 mmHg and group 2 (G2) with PASP ≥ 40 mmHg. Clinical, analytical and echocardiographic characteristics were evaluated in both groups. All-cause mortality was the primary endpoint. Univariate Cox regression analysis were performed to assess the prognostic value of each variable in the two groups. Then, the covariates included in the multivariate Cox regression analysis were those associated with the development of all-cause mortality in the respective univariate analyses. Kaplan-Meier survival curves were used to compare the unadjusted survival curves of the two groups.
Results: A total of 235 patients were enrolled. Median age was 74 years-old (IQR 64-81), 70.6% were males, 29.4% had PASP ≥ 40 mmHg and the median follow-up was 33 (IQR 18-66) months. Only 24.7% of the patients had previous history of heart failure (HF). Patients with PASP ≥ 40 mmHg were older and had lower left ventricular ejection fraction (LVEF). In the univariate Cox regression analysis, PASP ≥ 40 mmHg predicted death by all causes (HR 3.69; 95%CI 2.42-5.65; p < 0.001), along with other variates. Adjusted multivariate analysis (including age, dyslipidemia, hypertension, history of HF, serum creatinine, LVEF and Killip class ≥ 2), proved that PASP ≥ 40 mmHg was an independent predictor of mortality by all causes (HR 1.95; 95%CI 1.22-3.13: p = 0.005) in patients with ACS.



Kaplan-Meier survival curves for the two groups of PASP in the full study population. PASP, pulmonary artery systolic pressure.
Conclusions: In our study we concluded that PASP ≥ 40 mmHg detected at the time of ACS was an independent predictor of long term all-cause mortality, as well as age, dyslipidemia, serum creatinine and LVEF. These subsets of patients represent a very high risk group in which close attention should be paid during follow-up with the aim of improving their poor outcomes.

PO 142. DOBUTAMINE STRESS ECHOCARDIOGRAPHY FOR ASSESSMENT OF MYOCARDIAL VIABILITY: ACCURACY AND IMPACT OF BETA-BLOCKADE ON THE RESULTS

Pedro Teixeira Carvalho, Adriana Pacheco, Diana Carvalho, Lisa Ferraz, José Luís Martins, Jesus Viana, Ana Faustino, Manuela Vieira, Ana Briosa Neves

Centro Hospitalar do Baixo Vouga/Hospital Infante D. Pedro, EPE.

Introduction: Patients with ischaemic left ventricular (LV) dysfunction are often referred for dobutamine stress echocardiography (DSE) for the assessment of myocardial viability. These patients are usually receiving treatment with β-blockers (βB), either due to angina or heart failure. Although withdrawal of βB is common practise before a diagnostic DSE test, that is often not the case for viability assessment and there is limited information as to whether the accuracy of the test is affected by concurrent β-blockade. The purpose of this study, therefore, was to assess the accuracy of DSE to detect myocardial viability in patients with ischaemic LV dysfunction and to determine whether beta-blockade influences the results.
Methods: This was a retrospective study including consecutive patients who underwent DSE prior to revascularization. Key inclusion criteria were obstructive coronary artery disease causing ≥ 3 dysfunctional segments in the baseline resting evaluation. All patients underwent resting echocardiography (TTE) > 3 months after revascularization. A wall motion score was assigned to each segment for each DSE stage, using a standard 16 segment model of the LV. The segments were analysed individually for viability and were compared with the resting TTE after revascularization. Non-revascularized segments were excluded from the analysis.

Image 1: ROC curves for viability assessment according to beta-blocker intake

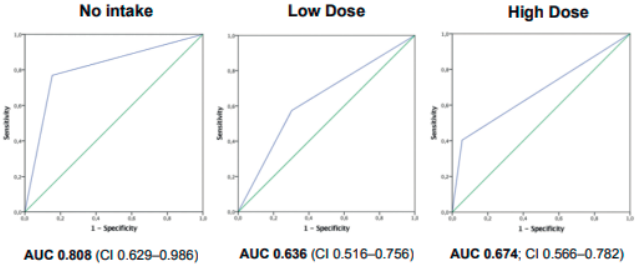


Table 1: DSE echocardiography performance for viability assessment according to beta-blocker intake status

Beta Blocker	Sensitivity	Specificity	Positive predictive value	Negative predictive value	Accuracy
No Intake	**77%**	85%	83%	79%	81%
Low Dose	**57%**	70%	76%	*50%*	*62%*
High Dose	**40%**	94%	92%	*50%*	*61%*
p value	***.001***	*.065*	*.262*	*.224*	*.201*

Results: Of the 25 patients included in the study, 84% were male and median age was 72 years (IQ 64-76). At least 44% of patients had documented prior myocardial infarction. Median basal LV ejection fraction was 44% (IQ 35-49). At the time of DSE, 16% of patients were not taking βB, 40% were on low-dose βB (25% of max dose) and 44% were on high-dose βB (≥ 50% of max dose). Coronary artery bypass grafting was performed in 40% of patients, the remainder underwent PCI. Revascularization was complete in 64% of patients. Median LVEF after revascularization was 46% (IQ 37-53). Of the 400

segments analysed, 232 (58%) were dysfunctional at rest, of which 206 (89%) had the corresponding coronary artery revascularized and were included in the analysis. There was an improvement of resting function on DSE in 78 (38%) of these segments. After revascularization, 134 of the dysfunctional segments (60%) recovered resting function. Accuracy for detecting viable segments was 64%, sensitivity was 52% and specificity was 83% (AUC 0.673; CI 0.599 – 0.747). There was an inverse relation of the dose of βB intake with exam sensitivity, as increasing doses were associated with inferior sensitivity (no intake: 77%; low dose: 57%; high dose: 40%; p = 0.001).
Conclusions: This study suggests that βB intake significantly reduces DSE sensitivity for the detection of viable myocardium in patients with ischaemic left ventricular dysfunction. There is a rationale for βB withdrawal before this exam. Further prospective data will assess this hypothesis.

PO 143. SERUM ALBUMIN: PROGNOSTIC VALUE IN PATIENTS WITH ACUTE CORONARY SYNDROME

Joana Guimarães[1], José Pedro Barbosa[2], Eric Monteiro[1], Diogo Fernandes[1], Gonçalo Costa[1], João Rosa[1], Gustavo Campos[1], Ana Sofia Martinho[1], José Paulo Almeida[1], André Azul Freitas[1], Cátia Ferreira[1], James Milner[1], João Ferreira[1], Carolina Lourenço[1], Graça Castro[1], Lino Gonçalves[1]

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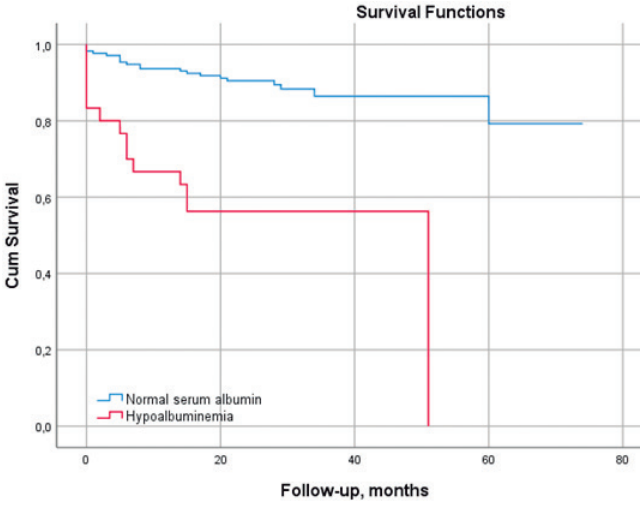
Introduction: Albumin is a negative acute-phase reactant. Therefore its levels decrease during proinflammatory states like cardiovascular disease. According to Starling's law, low plasma oncotic pressure related to hypoalbuminemia induces a fluid shift from the intravascular to the interstitial space, which may facilitate the onset of heart failure (HF). In this study we aim to assess if serum albumin levels at admission have prognostic value in patients with acute coronary syndrome (ACS).



Methods: This is a retrospective observational study of patients admitted for ACS in a single coronary intensive unit. Patients were divided in two groups, based on their serum albumin levels (hypoalbuminemia: < 3.5 mg/dl and normal albumin: ≥ 3.5 mg/dl). Clinical, analytical and echocardiographic characteristics were evaluated in both groups. The outcomes considered were new-onset HF and all-cause mortality. Unadjusted logistic regression analyses were performed separately to assess the development of new-onset HF. Univariate Cox regression analysis were performed to assess all-cause mortality. Then, the covariates included in the multivariate analysis were those associated with the development of new-onset HF and all-cause mortality in the respective univariate analyses. Kaplan-Meier survival curves were used to compare the unadjusted survival curves of the two groups.

Results: A total of 203 patients were enrolled. Median age was 68 years-old (IQR 60-78), 75.9% were males, 14.8% had hypoalbuminemia and the median follow-up was 27 (IQR 20-34) months. Only 18.7% of the patients had previous history of HF. Patients with hypoalbuminemia were older and had a higher Killip class (KK) at admission. In the univariate regression analysis, hypoalbuminemia predicted death by all causes (HR 5.45; 95%CI 2.73-10.91; p < 0.001) but did not predict new-onset HF (OR 2.48; 95%CI 0.09-6.95; p = 0.083). Adjusted multivariate Cox analysis (including age, dyslipidemia, chronic kidney disease, history of HF, serum creatinine, LVEF and KK ≥ 2), showed that hypoalbuminemia was an independent predictor of mortality by all causes (HR 2.44; 95%CI 1.11-5.38: p = 0.027) in patients with ACS, as well as age and dyslipidemia.
Kaplan-Meier survival curves for the two groups of serum albumin levels in the full study population.
Conclusions: In ACS, hypoalbuminemia is a valuable predictor of all-cause mortality, independent of other risk-factors, but it doesn't predict new-onset heart failure. The associated inflammatory state is a possible mechanism underlying hypoalbuminemia in this clinical setting. Therefore, understanding the connection between inflammation, hypoalbuminemia and poor outcomes in ACS could be useful to identify at-risk patients.

PO 144. THE PERCEIVED STRESS IN ACUTE CORONARY SYNDROME PATIENTS

Margarida Figueiredo, Hélder Santos, Mariana Santos, Paula Sofia Paula, Inês Gracio Almeida, Micaela Neto, Catarina sá, Samuel Almeida, Joana Chin, Catarina Sousa, Lurdes Almeida

Centro Hospitalar Barreiro/Montijo, EPE/Hospital Nossa Senhora do Rosário.

Objectives: A complex physiopathological process with an interaction between several dynamic factors that maybe influence the Acute Coronary Syndrome (ACS). Some authors supporter that stress is a serious risk factor in ACS. The Perceived Stress Scale (PSS-10) is one of the most useful and validate instruments to estimate the perceived stress.
Methods: Single-centre prospective study, engaging patients hospitalized with ACS between 20/03/2019-31/03/2020. All patients completed the PSS-10 during their hospitalization period. PSS-10 was validated in the Portuguese population by Trigo, *et al*, with 10 questions and 5 possible answers in which each question was punctuated between 0 and 4 (maximum 40 points), allowing us to estimate the level of stress in the context of physical disease. The pathological stress level was established in the Portuguese population as > 20 points in males and > 22 points in females. t-Student tests were used to compare categorical and continuous variables between groups and the Portuguese population. Multiple linear regression was used to establish the relation between the variables and the stress levels.
Results: 171 patients with ACS were included, 36.5% presented ST-Elevation Myocardial Infarction (STEMI), 38.1% of the ACS were females and the mean PSS punctuation of 19.5 ± 7.1. 70 patients presented a level of stress considered pathologic in the Portuguese population according to Trigo, *et al* (5) publication. Patients with pathologic stress scored 26.16 ± 3.76 points in the PSS-10 comparing to 14.43 ± 4.23 points in the general population, p < 0.001. Pathologic stress patients presented lower weight (73.52 ± 12.32 vs 77.09 ± 14.13, *p* = 0.035) and lower rates of normal coronary angiography (24.71% vs 29.41%, *p* = 0.050). No differences between groups were detected regarding age, sex, STEMI as ACS presentation, cardiovascular conditions and other comorbidities, admission clinical vital signs, admission blood analysis parameters, left ventricular ejection fraction (LVEF), MACE and hospitalization time. None of the variables was a predictor of pathologic stress. All the patients that completed the PSS-10 were discharged and no deaths were registered in our population during the hospitalization time. The presence of higher stress levels on the PSS-10 was not associated with severity at admission, namely with Killip-Kimball class at admission. Stress levels on the PSS-10 were a good predictor of ACS presentation as STEMI, R^2 0.41, p = 0.014 [odds ratio (OR): 1.006, p = 0.016, confidence interval (CI) 1.0001-1.011]. PSS-10 stress levels were not a predictor of MACE, nevertheless, they

were capable to predict stroke occurrence during the hospitalization for ACS with an R^2 0.42, p = 0.011.
Conclusions: Using real-life data, perceived stress should be considered a prognostic marker since has proved to be a predictor of STEMI presentation as well of stroke complication on ACS patients.

PO 145. EARLY VS LATE DEVELOPMENT OF ACUTE KIDNEY INJURY AND ITS PROGNOSTIC RELEVANCE IN ACS PATIENTS

Sara Borges, José João Monteiro, Pedro Carvalho, Catarina Ribeiro Carvalho, Marta Catarina Bernardo, Catarina Ferreira, J.Ilídio Moreira

Centro Hospitalar de Trás-os-Montes e Alto Douro, EPE/Hospital de Vila Real.

Introduction: Acute kidney injury (AKI) in acute coronary syndrome (ACS) patients (pts) is a well-known marker of worse prognosis. However, it remains unclear how timing of AKI correlates with mortality and morbidity.
Objectives: Assess the timing of AKI and evaluate its prognostic impact.
Methods: Retrospective study of pts with ACS periodically included in our center registry between March/2013 and December/2018. AKI was defined as an increase in creatinine ≥ 0.3 mg/dl; The primary endpoints was all-cause mortality and a composite of cardiovascular (CV) death, nonfatal myocardial infarction/stroke and readmission (MACCE) in the follow-up. Pts were classified into 3 groups according to the occurrence and timing of AKI: no-AKI (NA), early-AKI (EA)(< 48h) and late-AKI (LA) (> 48 h).
Results: We included 518 pts (67 ± 13 years; 73% males, 46% STEMI) of whom 17% developed AKI during hospitalizations - 47% (41pts) during the first 48h (EA) and 53% (47 pts) after that period (LA). During a median follow-up of 35 months, 42(8%) patients died and 96 (19%) had MACCE. AKI was associated with mortality (HR 3.6: 95%CI 1.8-7, p < 0.001) and MACCE (HR 1.8: 95%CI 1.1-3.1, p < 0.03). When divided into 3 groups, early AKI pts had higher risk of death (HR 5.6 95%CI 1.7-18.8, p = 0.005) or MACCE (HR 2.57 95%CI 1.4-4.7, p = 0.002) when compared to LA or NA (Figure). Early AKI pts were older (74 vs 67 ± 12, p < 0.001), had more CV risk factors (Hypertension 90% vs 66%, p = 0.002; diabetes mellitus 50%vs29%, p = 0.004) and comorbidities, namely: Chronic kidney disease (CKD): 14% vs 1%, p < 0.001; Cerebrovascular disease 18 vs 6%, p = 0.008). During hospitalization they had more heart failure (Killip Kimball (KK) class ≥ II: 25% vs 13%, p = 0.010) and lower left ventricle ejection fraction (46% vs 51%, p < 0.001) In multivariate analysis, after adjusting for age, CKD, percutaneous intervention and KK class, early AKI was an independent a predictor of death (HR 1.1 95%CI 1.0-1.1, p = 0.007).

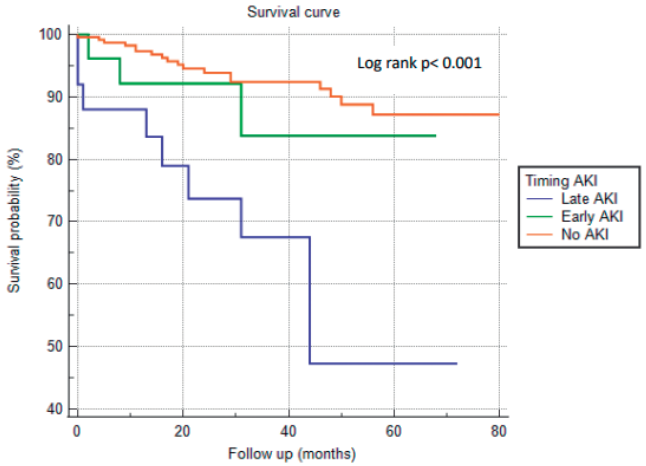


Figure 1 – Kaplan Meier Survival analysis

Conclusions: In this population of ACS pts, AKI is a frequent complication and the timing of its development has major prognostic implications, since AKI that develops in the first 48h (EA) is associated with worse outcomes. On the other hand outcomes in patients with late onset AKI resemble those who don't develop AKI.

PO 146. DIABETIC PATIENTS WITH ACUTE CORONARY SYNDROME - HIGHER RISK AND LESS WARNING SIGNS

Mafalda Carrington, Rita Rocha, Francisco Cláudio, Miguel Carias, João Pais, Diogo Brás, David Neves, Bruno Piçarra, Rita Santos, Manuel Trinca

Hospital do Espírito Santo, EPE, Évora.

Introduction: There is evidence in the literature reporting a higher prevalence of silent ischemia in diabetics, the possible reason being that diabetic neuropathy may also affect the perception of angina by these patients. In our daily practice, the assumption that diabetic with an acute coronary syndrome (ACS) may have less chest pain may increase our suspicion of ACS and referral for invasive treatment in the absence of typical symptoms.
Objectives: Our aim was to determine if the clinical and electrocardiographic presentation of an ACS was different between diabetic and non-diabetic patients.
Methods: We performed an observational retrospective study based on a multicentric national registry, in which we included all patients with ACS. We compared diabetic and non-diabetic patients in terms of their clinical and electrocardiographic features at presentation and performed a multivariate logistic regression to determine if diabetes mellitus (DM) was independently associated with development of chest pain as a predominant symptom of ACS. We also compared both groups outcomes, by measuring admission timings, management, and in-hospital mortality (IHM).
Results: Among a total of 18,827 patients with ACS, 31% (n = 5,864) had DM. Diabetic patients were older (69 ± 11 vs 65 ± 14, p < 0.001), had a higher proportion of females (32% vs 25%, p < 0.001) and more co-morbidities, including previous angina pectoris (31% vs 20%,p < 0.001). They presented less frequently with chest pain (87% vs 93%,p < 0.001) and more with dyspnea (7% vs 3%, p < 0.001) and fatigue (1% vs 0.4%, p < 0.001), and they were more frequently diagnosed with non-ST elevation myocardial infarction (NSTEMI) (55% vs 46%, p < 0.001) and unstable angina (UA) (7% vs 6%, p = 0.035). After adjusting for clinical variables and coronary artery anatomy, DM was associated with a 33% less probability of presenting with angina as the predominant symptom of ACS (OR 0.67; IC95%0.55-0.81). This was also true in the subgroup of patients with STEMI (OR 0.70; IC95%0.51-0.96) and in those with previous history of angina pectoris (OR 0.62; IC95%0.41-0.94). Finally, DM was associated with an increased time from symptom onset to first medical contact (FMC > 2h in 67% vs 60%, p < 0.001), as well as the time from symptom onset to reperfusion in STEMI patients (> 2h in 94% vs 90%, p < 0.001). IHM in diabetics was 4%, compared to 3% in non-diabetics (p < 0.001).
Conclusions: We conclude that DM decreases the probability of presenting with angina in patients with ACS and that diabetics have delayed FMC timings and higher in-hospital mortality. This negative effect of DM on angina experience was also present in the subgroup of STEMI patients, in which DM was also associated with delayed reperfusion. Consequently, in our daily practice as physicians, we should monitor more closely diabetic patients who may benefit from earlier referring to invasive treatment in the absence of typical angina.

PO 147. SHOULD HIV BE ROUTINELY SCREENED DURING ACS ADMISSION? RESULTS FROM A COHORT OF OVER 3.000 CONSECUTIVE PATIENTS

Marco Beringuilho, B. Lima, M. Santos, A. Jesus, M. Passos, C. Monteiro, M. Nédio, S. Baptista, P. Abreu, C. Morais

Hospital Amadora Sintra.

Introduction: People living with HIV (PLHIV) experience higher cardiovascular (CV) risk compared to uninfected population. Although the national DGS norm 058/2011 suggests screening for HIV in people aged

18-64 years, it is unclear whether it is adequate to screen people with coronary acute syndrome (ACS) for HIV infection. There are no international guidelines regarding this topic. The goals of this study were 1) to determine the prevalence of known HIV infection in patients which have undergone coronary angiography due to ACS and 2) compare their characteristics with a general ACS population, in order to support informed decision-making regarding systematic screening.
Methods: The authors did a retrospective cohort study in a hospital which serves an urban population of about 600,000 inhabitants with an estimated prevalence of HIV of 0.7%. In our center, all PLHIV are followed in a specific consultation, all patients undergoing coronary angiography are included in a prospective database, and a prospective database for new positive HIV serology is kept. The cross-reference of databases allowed the calculation of the prevalence of HIV infection among patients with SCA. Patients are not routinely screened for HIV at our center during ACS admission. The characteristics of the ACS with and without known HIV infection was compared with Qui-square testing. Data is presented as median (interquartile range). Mann-Whitney and Chi-square statistics were used.
Results: From January 2011 to June 2020, 3,078 patients undergone coronary angiography for ACS; age 63 (53-74) years, 69.7% male. In this period, n = 22 ACS patients had a diagnosis of HIV, determining a prevalence of 0.7%; age 53 (48-62) years, 90.9% male. HIV patients were significantly younger ($p < 0.05$). Regarding HIV infection, 3 patients were infected with HIV-2, 1 patient co-infected with HIV-1 and HIV-2 and the remaining 18 with HIV-1. No difference in cardiovascular risk factors was found between the infected and non-infected population.
Conclusions: To the best of our knowledge, this was one of the few studies to assess the prevalence of HIV infection in people with ACS. A prevalence of 0.7%, equal to the estimated prevalence in the area of influence of our hospital, does not favor the systematic screening of HIV in patients admitted for ACS. Nevertheless, these data may underestimate HIV prevalence since routine screening is not performed and patients with HIV followed in other institutions were not detected. Since HIV patients were significantly younger, the present data suggests for systematic screening according to the DGS norm (18-64 years) until multicentric data is available.

PO 148. SELEÇÃO DE DOENTES PARA CORONARIOGRAFIA INVASIVA ELETIVA – ESTAMOS A FAZER BEM?

Fernando Mané, Carla Rodrigues, Cátia Oliveira, Rui Flores, Paulo Medeiros, Rodrigo Silva, Isabel Campos, João Costa, Catarina Quina, Carlos Braga, Jorge Marques

Hospital de Braga.

Introdução: A elevada prevalência de doença coronária (DC) não obstrutiva nos doentes submetidos a coronariografia invasiva na avaliação da suspeita clínica de doença coronária estável, implica uma sobrecarga dos recursos existentes e aumento desnecessário dos custos além de submeter os doentes aos riscos de um procedimento invasivo.
Objectivos: Avaliar uma população de doentes submetidos a coronariografia invasiva para diagnóstico de DC estável e caracterizá-la de acordo com as estratégias de seleção de doentes utilizadas, nomeadamente os sintomas apresentados e os testes não invasivos realizados, e a prevalência de DC obstrutiva.
Métodos: Durante um ano, avaliaram-se 358 doentes (D) consecutivos, submetidos a coronariografia invasiva para diagnóstico de DC. Avaliaram-se as diferentes estratégias de diagnóstico utilizadas na seleção dos D e a sua contribuição para a correta identificação dos D com DC obstrutiva: antes da realização da coronariografia, procedeu-se à caracterização sistemática dos sintomas; registou-se em cada D, qual o teste não invasivo positivo que levou à sua orientação para coronariografia invasiva. Considerou-se DC obstrutiva como a presença de pelo menos uma estenose angiograficamente > 50% na árvore coronária.
Resultados: Da população considerada (idade média de 65 ± anos; 72,6% do sexo masculino) apenas 189 D (52,8%) apresentaram DC obstrutiva. Do total de 358 D, 77 D (21,5%) não realizaram qualquer teste não invasivo, 130 D (36,3%) realizaram prova de esforço, 78 D (21,8%) realizaram cintigrafia, 44 D (12,3%) realizaram ecocardiograma de sobrecarga, 14 D (3,9%) realizaram ressonância magnética de perfusão e 15 D (4,2%) realizaram angioTAC das coronárias. A prevalência da DC em cada um dos grupos foi: sem teste invasivo – 40,3%, prova de esforço – 59,2%, cintigrafia – 59%, ecocardiograma de sobrecarga - 45,0%, ressonância magnética de perfusão – 50% e angioTAC – 53,3%. Os sintomas apresentados pelos D em cada um dos grupos e a sua relação com a prevalência da DC estão indicados na tabela.
Conclusões: Na população estudada, encontrou-se uma prevalência elevada de DC não obstructiva. Mutos doentes foram referenciados coronariografia sem testes não invasivos prévios e dos que realizaram testes não invasivos, a maior percentagem foi a prova de esforço que, segundo as últimas recomendações, é um exame de segunda linha neste contexto quando comparada com os teste de imagem. No entanto, a prova de esforço nesta população, mostrou semlhante poder discriminativo que os testes de imagem na estratificação de doentes com DC obstructiva. Este achado está provavelmente relacionado com o facto deste grupo ter maior percentagem de doentes com dor torácica típica e menos doentes assintomáticos ou com dor torácica não anginosa ao contrário dos doentes que realizaram testes de imagem. Este achado realça a importância da clínica no diagnóstico de doença coronária estável.

	Sem teste				Prova Esforço				Cintigrafia				Eco Stress				RMN perfusão				AngioTAC			
	n	%dts	DC obstructiva	%DC obs	n	%dts	DC obstructiva	%DC obs	n	%dts	DC obstructiva	%DC obs	n	%dts	DC obstructiva	%DC obs	n	%dts	DC obstructiva	%DC obs	n	%dts	DC obstructiva	%DC obs
	77	21,5%	31	40,3%	130	36,3%	77	59,2%	78	21,8%	46	59,0%	44	12,3%	20	45,5%	14	3,9%	7	50,0%	15	4,2%	8	53,3%
Angina típica	19	24,7%	12	38,7%	55	42,3%	45	58,4%	16	20,5%	13	28,3%	12	27,3%	9	45,0%	2	14,3%	2	28,6%	2	13,3%	1	12,5%
Angina atípica	27	35,1%	11	35,5%	32	24,6%	17	22,1%	21	26,9%	11	23,9%	10	22,7%	3	15,0%	4	28,6%	0	0,0%	2	13,3%	1	12,5%
Não anginosa	20	26,0%	4	12,9%	17	13,1%	4	5,2%	14	17,9%	6	13,0%	11	25,0%	2	10,0%	3	21,4%	1	14,3%	6	40,0%	2	25,0%
Outro	6	7,8%	3	9,7%	15	11,5%	7	9,1%	13	16,7%	8	17,4%	4	9,1%	2	10,0%	2	14,3%	2	28,6%	3	20,0%	2	25,0%
Assintomático	5	6,5%	1	3,2%	11	8,5%	4	5,2%	14	17,9%	8	17,4%	7	15,9%	4	20,0%	3	21,4%	2	28,6%	2	13,3%	2	25,0%

PO 148 Figure

Virtual Posters | Posters - F. Valvular, Myocardial, Pericardial, Pulmonary, Congenital Heart Disease

PO 149. ASYMPTOMATIC SEVERE AORTIC STENOSIS: WHAT IS THE CURRENT ROLE OF EXERCISE STRESS TEST AND NT-PROBNP IN PATIENT RISK STRATIFICATION

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Introduction: Aortic stenosis (AS) is prevalent in the elderly population. When severe and the patient is symptomatic or left ventricular dysfunction arises, the prognosis deteriorates and valve replacement (AVR) is recommended. During the asymptomatic phase regular clinical evaluation is advised to detect early onset of symptoms and/or signs of myocardial maladaptation. Due to the inherent difficulties in the evaluation of symptoms, especially in the elderly, as well as the change in prognosis

when symptoms appear (even if not perceived), it is crucial to evaluate the behavior of patients with effort and signs of myocardial injury.
Methods: An observational and retrospective study that included 74 patients with severe AS (aortic valve area ≤ 1cm²and/or aortic transvalvular mean gradient ≥ 40 mmHg), who underwent exercise stress test and NT-proBNP evaluation for risk stratification. The outcome studied was hospitalization for heart failure (HF), or referral to SV, or death during the follow-up period. Independent predictors were obtained using multivariate Cox regression.
Results: Non-progression or decrease in systolic blood pressure in exercise stress test is the only independent predictor of a short-term adverse event (p = 0.025). This parameter, NT-proBNP levels and interventricular septal thickness were independent predictors of a medium (two (p = 0.025; p = 0.014; p ≤ 0.001), three (p = 0.015; p = 0.007; p = 0.001) and four years (p = 0.007; p = 0.049; p = 0.005)) and a long term adverse event (p = 0.006; p = 0.028; p = 0.005).
Conclusions: In asymptomatic patients with severe AS, no progression or decrease in systolic blood pressure in exercise stress test, increased NT-proBNP levels and thickness of interventricular septal thickness were independent predictors of hospitalization for HF, need for AVR or death in short, medium and long term.

PO 150. RIGHT ATRIAL STRAIN BY SPECKLE-TRACKING ECHOCARDIOGRAPHY AS A PROGNOSTIC PREDICTOR IN A PULMONARY HYPERTENSION COHORT

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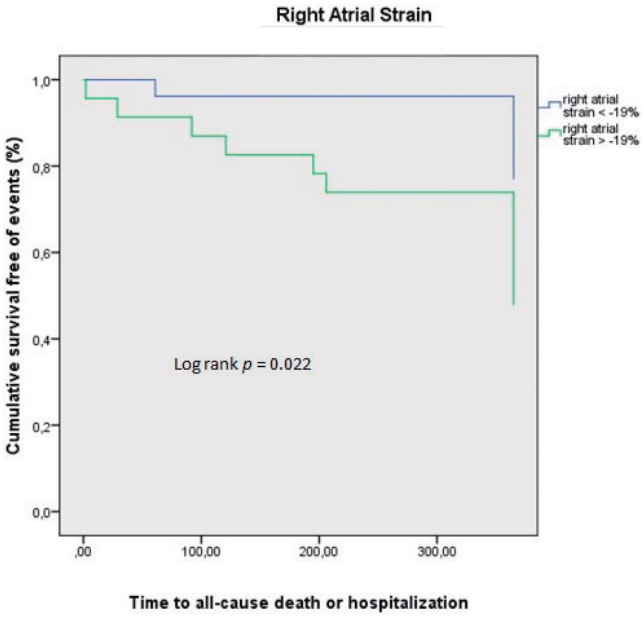
Introduction: Right atrial (RA) strain is a promising technique for the assessment of RA function and several studies have suggested it is a powerful prognostic marker in pulmonary hypertension (PH) patients (pts). Our aim was to assess the prognostic power of the RA strain in Pulmonary Arterial Hypertension (PAH) and Chronic Thromboembolic Pulmonary Hypertension (CTEPH) pts.
Methods: Pts with PH were prospectively studied and several clinical/demographic/echocardiographic were retrieved as well as data from six-minute walk test (6MWT) and brain natriuretic peptide (BNP). Correlation between RA strain and other variables was tested with Pearson's correlation analysis. Regression and survival analysis was performed to assess the combined endpoint of all-cause mortality or hospitalization in the first follow-up year (MH_1).



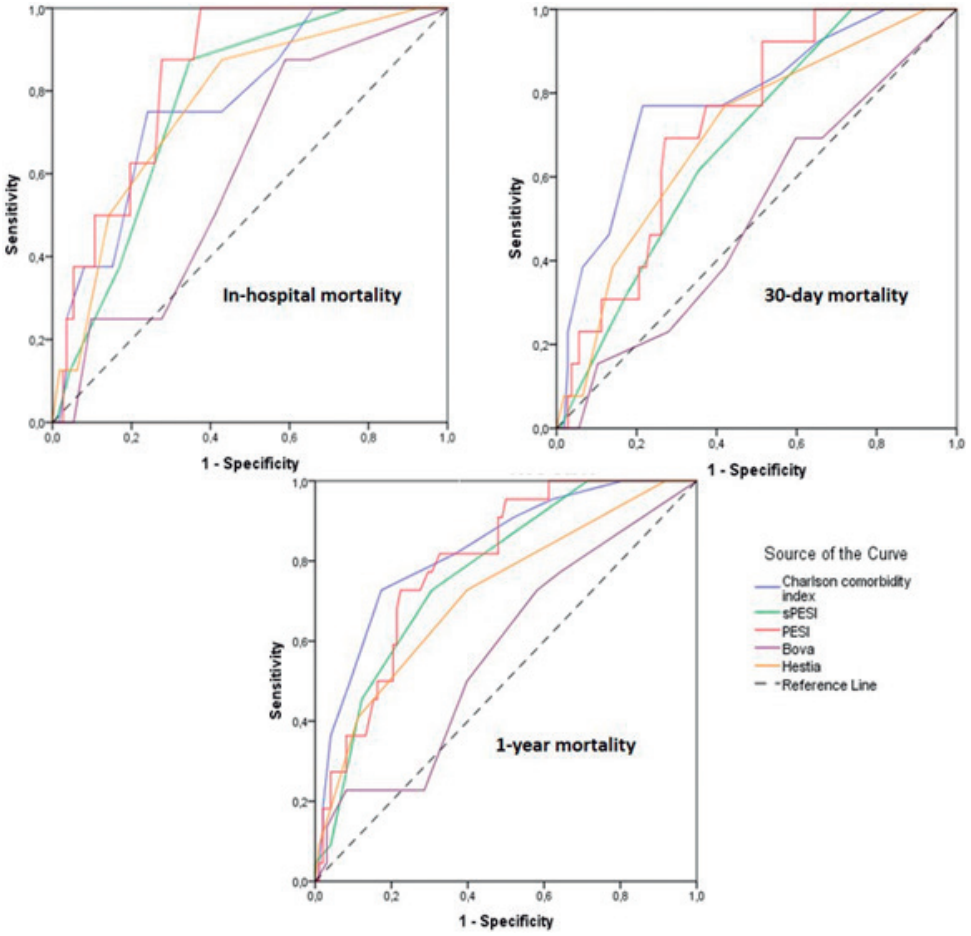
Results: A total of 51 PH pts (mean age 54 ± 46 years, 33.3% male, baseline BNP of 342.4 ± 439.9 pg/mL and baseline pulmonary artery systolic pressure – PASP - of 78 ± 26 mmHg), of which 64.7% had PAH and 35.3% presented CTEPH. 19 pts (37.3%) met the primary endpoint. The mean RA strain was -21.9 ± -4.9%, with no significant difference between groups (-23.4% vs -17.8%, p = 0.150), however male pts had a significantly lower RA strain (-15.9% vs -25.1%, p = 0.014). There was a statistically significant (p < 0.05) correlation between RA strain and age (r = -0.287), indexed RA area (-0.539), index RA volume (-0.522) and right ventricular strain (-0.453). There was no correlation between RA strain and BNP value (p = 0.150), 6MWT distance (p = 0.145) or PASP (p = 0.072). RA strain was a predictor of MH_1 (OR = 0.94, 95%CI: 0.894-0.998, p = 0.048). Pts who met the primary endpoint had a significantly lower RA strain (-17.0 vs -24.6%, p = 0.032). Those with a RA strain below -19% presented a significantly lower free of events during the first follow-up year (log rank p = 0.022).
Conclusions: RA strain is a powerful predictor of adverse events in a PH population and should be systematically assessed in order to improve risk stratification.

PO 151. PROGNOSTIC ACCURACY OF 4 ACUTE PULMONARY EMBOLISM MORTALITY RISK SCORES: EARLY AND LONG TERM PERFORMANCE

Luís Resendes de Oliveira, Fabiana Duarte, Maria Inês Barradas, Cátia Serena, António Fontes, Carla Almeida, Carina Machado, André Monteiro, Raquel Dourado, Emília Santos, Nuno Pelicano, António Miguel Pacheco, Anabela Tavares, Dinis Martins

Hospital do Divino Espírito Santo, Ponta Delgada.

Introduction: Acute pulmonary embolism (PE) is a frequent condition associated with significant morbidity and mortality. Multiple scores have been developed and validated to predict 30-day mortality risk, however accurate prognostic assessment remains a challenge in clinical practice.
Objectives: To compare the performance of PESI, simplified PESI, Hestia and Bova scores in predicting in-hospital, 30-day and 1-year mortality risk for acute PE.
Methods: We retrospectively assessed consecutive patients from a single center registry who were hospitalized with acute PE between January 2017 and October 2020. Discriminative power of each score was assessed by receiver operating characteristic curve analysis. Charlson comorbidity index (CCI) was also assessed for comparison.
Results: A total of 131 patients with a mean age of 67.6 ± 15.3 years were included with a mean follow-up of 46.3 ± 17.7 months. Thirty-six patients (27.5%) had a recent hospitalization or major surgery and 26 (19.8%) a medical history of cancer. Besides anticoagulation, 7 patients (5.3%) underwent fibrinolysis. Overall in-hospital mortality was 8.4%, 30-day mortality 12.2% and 1-year mortality 19.8%. All acute PE scores, except Bova score, were significantly higher in those patients who died during hospitalization and on 30-day and 1-year follow-up. CCI was also higher in those patients. Discriminative power for in-hospital mortality was higher for PESI (c-statistic 0.84, 95%CI 0.74-0.93, p = 0.002), followed by sPESI (c-statistic 0.77, 95%CI 0.65-0.90, p = 0.010) and Hestia (c-statistic 0.77, 95%CI 0.61-0.92, p = 0.011). The Bova score showed a poor discriminative power for prediction of in-hospital mortality (c-statistic 0.61, 95%CI 0.43-0.78, p = 0.325). For 30-day and 1-year mortality PESI score still maintained the best performance with acceptable discriminative power (c-statistic 0.73, 95%CI 0.61-0.85, p = 0.007 for 30-day mortality; c-statistic 0.80, 95%CI 0.71-0.89, p < 0.0001 for 1-year mortality). However at longer follow-up CCI had a better performance to predict worse outcomes (c-statistic 0.79, 95%CI 0.65-0.92, p = 0.001 for 30-day mortality; c-statistic 0.83, 95%CI 0.74-0.92, *p* < 0.0001 for 1-year mortality).
Conclusions: All scores, except Bova score, showed overall good performance in stratifying mortality for acute PE, however PESI score performed better in this population particularly at shorter follow-up. At longer follow-up, although PESI score maintained an acceptable performance, comorbidities seem to play a bigger role. The different performance of multiple scores highlights the complexity of this condition.



PO 151 Figure

PO 152. "SO I HAVE PULMONARY HYPERTENSION AFTER ALL?": CHARACTERIZATION AND OUTCOMES OF PATIENTS WITH THE NEW HAEMODYNAMIC DEFINITION OF PULMONARY HYPERTENSION

João Grade, Ana Rita Pereira, Mariana Martinho, Barbara Ferreira, Alexandra Briosa, Ana Marques, Sofia Alegria, Filipa Ferreira, Rita Calé, Sofia Almeida, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Since the 1st World Health Organization Symposium on Pulmonary Hypertension, Pulmonary hypertension (PH) was defined by a mean pulmonary arterial pressure (mPAP) = 25 mmHg. During the 6th World Symposium on Pulmonary Hypertension the haemodynamic definition of PH was revised, lowering the threshold from = 25 mmHg to > 20 mmHg.
Objectives: Our aim was to assess the characteristics and outcomes of the patients who had a new haemodynamic diagnosis of PH.
Methods: We performed a 9 year retrospective analysis of all patients undergoing RHC for suspicion of pulmonary hypertension and had a mPAP > 20 mmHg and < 25 mmHg with increased pulmonary vascular resistance (defined by = 3 Wood units), without vasodilator therapy or additional therapy, in a single expert centre. Medical records were analysed for demographic and procedural data.
Results: Of the 321 patients assessed and submitted to RHC, 24 patients fulfilled all inclusion criteria and were analysed. The mean age was 60 ± 13 at time of RHC with a female preponderance (74%). All patients were referred due to echocardiographic suspicion of PH. 34.8% were asymptomatic; 43.5% were in New York Heart Association (NYHA) class II; 21.7% were in NYHA class III. As for the clinical classification, 26% were group I; 8.7% group II; 17.4% group III; 30.4% group IV and 17.4% multifactorial; With an average follow up of 3.8 ± 2.4 years only 3 patients (13%) had right ventricle disfunction, 1 episode (4%) of admission due to cardiovascular cause and no documented cardiovascular deaths (with 5 patients, 21%, with a non-cardiovascular/ undisclosed death). Only 4 (17%) patients had a repetition of RHC, 1 was performed after thromboendoarterectomy and documented normalization of haemodynamic parameters, 1 had no PH and 2 progressed to the classic definition of PH, 1 patient in group 2 latter submitted to heart transplant and 1 patient in group 3 who was not eligible for vasodilator therapy, without events in the follow up.
Conclusions: The patients who constitute the new haemodynamic definition of PH, with mPAP > 20 mmHg and < 25 mmHg, may constitute a low risk subgroup of patients, only requiring follow up in a dedicated center without prompt initiation of therapy.

PO 153. LEFT VENTRICULAR NON-COMPACTION AND ECOSCOREE: PROGNOSTIC VALUE OF A NEW ECHOGRAPHIC RISK SCORE

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Introduction: Left Ventricular Non-Compaction (LVNC) is a rare and underdiagnosed cardiomyopathy, characterized by hypertrabeculation of the left ventricle. This disease is associated with high rates of morbidity and mortality; however, its main adverse prognostic factors are not well established.
Objectives: To create a risk score for LVNC based on echocardiographic criteria (EcoScore) to predict the occurrence of adverse events.

Methods: The authors included patients with the diagnosis of LVNC, according to the Jenni Criteria. Clinical and echocardiographic data were evaluated and the occurrence of the following adverse events was reported: hospitalizations due to supraventricular or ventricular tachyarrythmias and heart failure, acute myocardial infarction, stroke, heart transplant and death. The follow-up time was 24 months. ROC curves to predict the occurrence of at least one adverse event were constructed for each echocardiographic parameter. The optimal cut-off obtained from each ROC curve was then used to attribute points (1 point per parameter). The EcoScore resulted from the sum of the obtained points. The authors finally created a ROC curve to predict the occurrence of any adverse event for the EcoScore. The statistical analysis was performed in SPSS. p value < 0.05 was considered statistically significant.
Results: 33 patients (48.5% male, age at diagnosis 45.9 ± 21 years) were included in this study. The optimal cut-offs for each parameter obtained from the ROC curves were the following: left ventricle dyastolic diameter > 55 mm, left atrial diameter > 40 mm, pulmonary artery systolic pressure > 22 mmHg and left ventricle ejection fraction < 40%. The area under the curve for the EcoScore to predict any adverse event was 0.850 (p = 0.017) and an EcoScore > 1 had a sensibility of 85.7% and a specificity of 70%.
Conclusions: The EcoScore accurately predicted the occurrence of at least one adverse event in this population. Thus, it could be a good tool in the daily practice to select patients who may benefit from a more aggressive surveillance and treatment.

PO 154. THE MAIN PREDICTORS OF IN-HOSPITAL MORTALITY IN PATIENTS WITH INFECTIVE ENDOCARDITIS: A RETROSPECTIVE SINGLE-CENTER STUDY

Bárbara Ferreira, Inês Cruz, Ana Marques, Ana Rita Pereira, Alexandra Briosa, João Grade Santos, Sofia Alegria, Daniel Sebaiti, Mariana Martinho, Ana Rita Almeida, Isabel João, Paula Fazendas, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Infective endocarditis (IE) is a serious disease with high level of in-hospital morbidity and mortality; it is associated with severe complications including clinical evolution with septic shock and heart failure or presence of local complications.
Objectives: Identify and characterize predictors of in-hospital mortality in IE.
Methods: Single-center retrospective analysis of patients (pts) with IE admitted during a 14 –year period (2006-2020). Data on past medical history, clinical presentation, epidemiology, isolated microorganisms, echocardiogram and clinical outcomes during hospitalization were evaluated.
Results: A total of 222 pts were included, 72.1% males, age: median 66 (IQR 23) years. Infective endocarditis in a prosthetic valve occurred in 24.8%. Staphylococcus aureus was isolated in 27% (60 pts) and negative blood-cultures endocarditis in 18% (40 pts). Using transesophageal echocardiogram (TEE) perianullar complications were diagnosed in 18% (40 pts): isolated abscess in 8.6%, pseudoaneurysm in 8%, fistula in 0.5% and more than one complication in 5.4%. Clinical evolution with heart failure occurred in 34.7% and septic shock in 20.7%. Seventy-five pts (33.8%) underwent surgery. The in-hospital mortality rate was 28.8% (64 pts). We performed a logistic regression model to identify the main risk factors for in-hospital mortality which were: Staphylococcus aureus etiology (OR 3.503; 95%CI: 1.422-8.625), negative blood-cultures endocarditis (OR 3.503; 95%CI: 1.237-8.309), clinical evolution with septic shock (OR: 7.715; 95%CI: 3.237-18.384) and clinical evolution with heart failure (OR: 4.923; 95%CI: 2.223-10.903). Age had a minimal influence (OR 1.041; 95%CI: 1.013-1.069). Cardiac surgery was a protective factor for in-hospital mortality (OR: 0.133; 95%CI: 0.046-0.389). Valve type, evidence of valve obstruction or perianullar complications in TEE did not influence in-hospital mortality in this cohort of patients.
Conclusion(s): In our population the main risk factors for in-hospital mortality were clinical evolution with heart failure and septic shock, Staphylococcus aureus etiology and negative blood-cultures endocarditis. Surgical correction significantly decreased the in-hospital mortality.

PO 155. REAL-WORLD, VERY LONG-TERM FOLLOW UP SURVIVAL OF INCIDENT PATIENTS WITH PULMONARY HYPERTENSION

Cátia Santos Ferreira, Tiago Festas, Patricia Marques-Alves, André Freitas, Valdirene Gonçalves, Sofia Martinho, José Paulo Almeida, Gustavo Campos, João Rosa, Graça Castro, Rui Baptista, Lino Gonçalves

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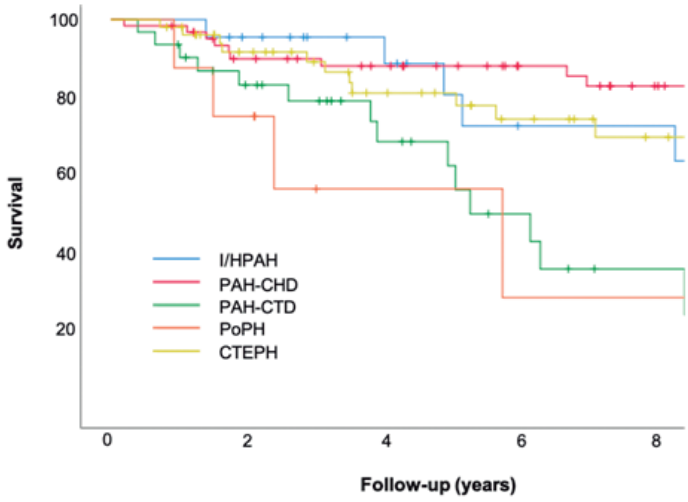
Introduction: Pulmonary hypertension (PH) is a clinical syndrome characterized by an increase in pulmonary artery pressure. Among the five groups of PH, pulmonary arterial hypertension (PAH) and chronic thromboembolic pulmonary hypertension (CTEPH) stand out due to their ominous prognosis without specific treatment. However, very long-term outcomes data are scarce. We aimed to assess the very long-term survival of PAH and CTEPH patients followed in a Portuguese PH referral center.
Methods: Between January 2009 and January of 2020, all incident PH cases were consecutively enrolled in a prospective cohort study. A total of 177 patients were followed up for a median of 5.0 [interquartile range 2.3–8.7] years. Kaplan-Meier survival analysis was used to estimate 1-, 5- and 9-year survival and multivariate regression was used to predict independent prognostic factors.
Results: Mean age was 49 ± 20 years with a clear female preponderance (67%). The most common PH subgroups were congenital heart disease (PAH-CHD) (n = 62; 35%), followed by CTEPH (n = 52; 29.4%), connective tissue disease (PAH-CTD) (n = 31; 17.5%), idiopathic/hereditary PAH (I/HPAH) (n = 22; 12.4%) and portopulmonary hypertension (PoPH) (n = 8; 4.5%) (Table 1). PAH-specific drugs were used in 91% of the patients, dual combination therapy in 47.5%, and triple combination in 12.4% (Table 2). The remaining 9% successfully received non-pharmacological treatment, namely cardiac surgery in PAH-CHD (n = 7) and endarterectomy or angioplasty in CTEPH (n = 9). Survival rates at 1-, 5- and 9-years were 97%, 80% and 66%, respectively. Age (hazard ratio [HR] 1.02; 95%CI 1.01–1.04; p = 0.049), BNP [HR 2.04 (1.16–3.60); p = 0.01], admission for decompensation of heart failure (HF) [HR 3.15 (1.71–5.83); p < 0.001] and PH type [p = 0.01] were predictors of all-cause mortality. PAH-CHD had the better long-term survival (9-year survival of 83%), whereas PAH-CTD and PoPH were associated with a worse prognosis (9-year survival of 24% and 28%, respectively) (Figure). Regarding admissions for decompensated right HF, BNP was an independent predictor [HR 3.39 (2.12–5.43); p < 0.001] and no difference was found between PH etiologies.

Table 1. Baseline characteristics of the study population at diagnosis

	Overall (n =177)	PAH (n = 125)	CTEPH (n = 52)	p value
Age, years	49.2±20.1	43.9±19.8	61.9±14.5	< 0.001
Male, n (%)	59 (33.3)	35 (28.0)	24 (46.2)	0.02
Diagnosis				
I/HPAH, n (%)	22 (12.4)	22 (17.6)	NA	
CTD, n (%)	31 (17.5)	31 (24.8)	NA	
CHD, n (%)	62 (35.0)	62 (49.6)	NA	
PoPH, n (%)	8 (4.5)	8 (6.4)	NA	
PVOD, n (%)	1 (0.6)	1 (0.8)	NA	
Anorexigenic, n (%)	1 (0.6)	1 (0.8)	NA	
NYHA				0.41
I/II, n (%)	52 (29.4)	39 (31.2)	13 (25.0)	
III/IV, n (%)	125 (70.6)	86 (68.8)	39 (75.0)	
6MWT, m	400±113	403±115	395±109	0.74
Hemodynamics				
mPAP, mmHg	53±18	56±20	49±13	0.02
RAP, mmHg	8±4	7±4	9±5	0.006
PCWP, mmHg	11±5	10±5	13±6	0.004
CI, l/min/m2	2.5±1.3	2.8±1.4	2.2±0.8	0.002
PVR, WU	12±7	12±8	11±5	0.19
SvO2, %	67±10	69±9	63±8	< 0.001
Biomarkers				
BNP, pg/ml	110 [39-402]	84 [37-348]	228 [75-889]	0.03
Creatinine, mg/dl	0.87 [0.71-1.08]	0.84 [0.70-1.04]	0.92 [0.75-1.09]	0.15



Number at risk	175	138	102	70	54
I/HPAH	22	19	14	8	8
PAH-CHD	62	51	45	34	28
PAH-CTD	31	22	13	7	3
PoPH	8	6	2	1	1
CTEPH	52	40	28	20	14

Log-rank P <0.001

PO 155 Figure Kaplan-Meier curves for all-cause mortality.

Table 2. Pulmonary hypertension treatment at last follow-up visit

	Overall (n = 177)	PAH (n = 125)	CTEPH (n = 52)
Pharmacological class, n (%)			
No pharmacological treatment	16 (9.0)	8 (6.4)	8 (15.4)
PDE5i	109 (61.6)	82 (65.6)	27 (51.9)
ETA	131 (74.0)	106 (84.8)	25 (48.1)
Prostacyclin analogue	27 (15.3)	26 (20.8)	1 (1.9)
Riociguat	22 (12.4)	8 (6.4)	14 (26.9)
Combination therapy, n(%)			
Single	55 (31.1)	33 (26.4)	22 (42.3)
Double	84 (47.5)	63 (50.4)	21 (40.4)
Triple	22 (12.4)	21 (16.8)	1 (1.9)
Non-pharmacological treatment, n (%)			
PEA/pulmonary angioplasty	17 (9.6)	0 (0)	17 (32.7)

Conclusions: In this cohort of incident PH patients, the overall 9-year survival rate was 66%. PAH-CHD patients had better overall prognosis, while patients with PAH-CTD and PoPH had the worst prognosis. Additionally, older age, higher BNP and admission for HF were associated with higher mortality.

PO 156. STAGING CARDIAC DAMAGE IN AORTIC VALVE DISEASE: ONE SIZE FITS ALL?

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Introduction: Nowadays, in patients with aortic regurgitation (AR), aortic valve surgery is indicated when severe and symptomatic or those with depressed LVEF. However, clinical outcomes of patients with significant aortic regurgitation are not influenced by these factors only. Recently, a new staging system for severe aortic stenosis has been proposed by Généreux et al, on the basis of the extent of anatomic and functional cardiac damage. If this model could be applicable to an unselected significant AR population has not been tested.

Objectives: The aim of our study was to evaluate the prevalence of the different stages of extra-aortic valvular cardiac damage by the application of Généreux staging and its impact on prognosis in a large, real world cohort of significant AR patients.

Methods: This study retrospectively analysed the clinical, Doppler echocardiographic and outcome data in patients with grade III or greater AR between January 2014 and September 2019. According to the extent of cardiac damage on echocardiography, patients were classified as Stage 0 (no cardiac damage), Stage 1 (left ventricular damage), Stage 2 (mitral valve or left atrial damage), Stage 3 (tricuspid valve or pulmonary artery vasculature damage) or Stage 4 (right ventricular damage). Exclusion criteria were severe aortic stenosis and previous valve repair or replacement. The primary end-point was all-cause mortality.

Results: A total of 573 patients, aged 70.1 ± 13.9 years, 294 (51.3%) men were enrolled. One third of patients were in NYHA I. Based on the proposed classification, 82 patients (14.3%) were classified in stage 0, 130 (22.7%) in stage 1, 276 (48.2%) in stage 2, 68 (11.8%) in stage 3 and 17 (3.0%) in stage 4. Median follow-up time was 3.3 ± 1.9 years. There was a progressive increase in mortality rates according to staging: 8.5% in stage 0, 10.8% in stage 1, 24.9% in stage 2, 42.6% in stage 3 and 52.9% in stage 4 ($p < 0.001$). On multivariable analysis, the extent of cardiac damage was independently associated with excess mortality (HR 1.69 per each increment in stage, 95%CI 1.29 to 2.21).

Conclusions: Our study demonstrated that this new staging system studied for aortic stenosis also provides increased prognostic value to patients with significant aortic regurgitation. This staging system can be helpful to identify the degree of extra-aortic valvular cardiac damage and to optimize the time of valvular intervention. Further prospective studies are needed to confirm the benefit of the applicability of this model in clinical practice.

	Stage 0	Stage 1	Stage 2	Stage 3	Stage 4
	No cardiac damage	LV damage	LA or Mitral damage	Pulmonary vasculature or Tricuspid damage	RV damage
Echocardiogram		Increased LV mass index LVEF < 50%	Indexed LA volume >34mL/m² Moderate-severe MR Atrial Fibrillation	SPAP > 60mmHg Moderate-severe TR	TAPSE <17mm
Prevalence in cohort	14.3% (n=82)	22.7% (n=130)	48.2% (n=276)	11.8% (n=68)	3.0% (n=17)

Fig.1 Cardiac stratification based on the extent of cardiac damage. LA, left atrial; LV left ventricle; LVEF, left ventricular ejection fraction; MR, mitral regurgitation; RV right ventricle; SPAP, systolic pulmonary artery pressure; TAPSE, tricuspid annular plane systolic excursion; TR, tricuspid regurgitation

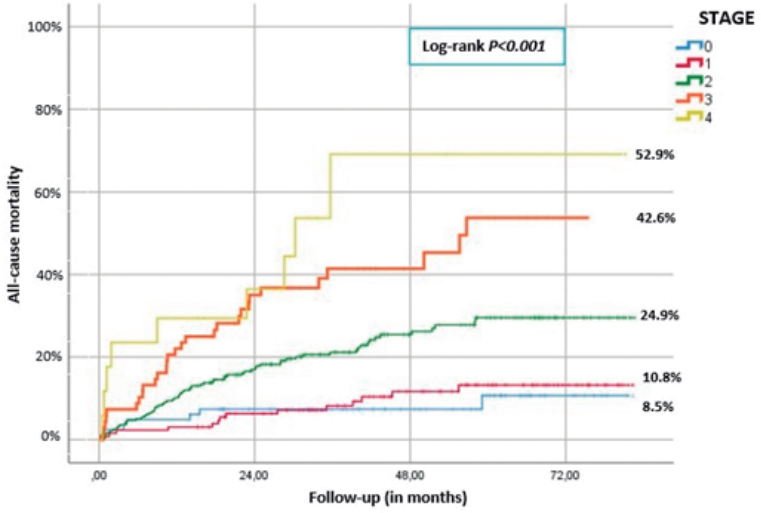

Fig.2 Outcomes according to stages of cardiac damage.

PO 156 Figure

PO 157. CAUSES OF DEATH IN PULMONARY ARTERIAL HYPERTENSION PATIENTS: IS THERE SOMETHING ELSE BESIDES THE RIGHT VENTRICLE?

Bárbara Ferreira, Filipa Ferreira, Sofia Alegria, Ana Rita Pereira, Alexandra Briosa, Débora Repolho, Ângela Manuel, Maria José Loureiro, João Grade Santos, Mariana Martinho, Ana Marques, Daniel Sebaiti, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: Pulmonary arterial hypertension (PAH) has great morbidity and mortality. Despite improvements in the diagnosis and management of PAH over the past 2 decades with the introduction of targeted medical therapies leading to improved survival, the disease continues to have a poor long-term prognosis. It is reasonable to postulate that, with improved survival, not all patients die from right ventricular (RV) failure. The direct cause of death in PAH patients is not well studied.
Objectives: to identify the main cause that led to the death of patients with PAH in a tertiary care center in the modern era and to investigate clinical context and treatment in this patient population before death.
Methods: Retrospective single-center study of consecutive deceased patients (pts) with a diagnosis of PAH confirmed by right heart catheterization who were regularly followed in our center between 2008 and 2020. Data were collected concerning last clinical evaluation before death. The clinical circumstances surrounding the deaths were analyzed.
Results: From 82 pts followed in our referral center with PAH, a total of 29 patients died (mean age at diagnosis 48 ± 16 years; 62.1% female). Median time from diagnosis to death was 3.0 years (range 0 to 35). World Health Organization functional class at the time of last clinic visit was either III or IV in 65% patients and more than a half (55%) had physical findings suggestive of right heart failure. Right ventricle was severely dilated in 34.5% with impaired systolic function in 55.2%. Ten patients (34.5%) were on oxygen, all patients were under pulmonary vasodilator therapy (PVT), that included combined therapy in 76% and parental prostacyclin analogues in 46.2%. Two patients died waiting for lung transplant. The causes of death were divided as follow: G1- Directly related to PAH (72.4%): 16 pts with progressive right heart failure and 5 pts with sudden death; G2- related to an intercurrent illness in which PAH contributed to the death (10.3%); G3 – Unrelated to PAH (13.8%). The final cause of death could not be adequately assessed in 1 patient. As expected, pts in G1 had more severe disease than G3, by multiparametric prognostic factors specified in the table. Importantly, 79.3% of the patients that died directly from PAH were not in high-risk in last clinical visit assessed by COMPERA score.
Conclusions: In the vast majority of our PAH patients, the disease contributed to their death. Right ventricular failure or sudden death was the sole cause of death in 72.4%. Near 80% of these patients were not in high-risk. More studies are needed to identify pts at risk of death related to PAH in patients with low or intermediate risk.

Table 1 - Comparison of clinical characteristics, hemodynamic and echocardiographic features between groups

Variables *	All patients (n=29)	Deaths related PAH G1 (n=21)	Deaths partially related G2 (n= 3)	Deaths unrelated G3 (n=4)	p-value
Age at diagnosis (years)	48,0±16,0	46,4 ± 17,9	49,43 ± 13,6	53,25 ± 16,3	
WHO FC≥III (%)	65,5	71,4	100	0	**0,018**
Clinical signs right HF (%)	55,2	66,7	66,7	0	**0,014**
NT-proBNP (pg/mL)	3762	11043	12342	834	**0,012**
6MWT (m)	390	375	350	350	0,303
RA area (cm2)	25,7	31,37	24,7	18	0,100
TAPSE (mm)	17,9 ± 7,3	15,6 ± 4,5	13,0 ± 6,6	27,5 ± 6,9	**0,013**
S' Tricuspid (cm/s)	10,30 ± 3,14	9,01 ± 2,31	12,07 ± 4,81	13,00 ± 2,94	0,207
FAC (%)	27,4 ± 14,0	21,4 ± 8,3	23,9 ± 16,6	42,2 ± 12,8	0,063
Pericardial effusion (%)	22,2	31,6	0	0	**0,027**
SvO2 (%)	67,9 ± 9,7	66,8 ± 10,9	66,8 ± 9,1	69,7 ± 3,6	0,057
SaO2 (%)	92,2 ± 4,2	91,2 ± 4,7	93,1±1,2	95,1 ± 3,2	0,528
Mean RAP (mmHg)	10,4 ± 8,0	12,4 ± 9,0	8,0 ± 5,2	4,5 ± 1,5	0,059
Mean PAP (mmHg)	48,7 ± 12,1	49,9 ± 12,4	49,7±9,3	44,0 ± 17,5	0,847
Cardiac Index (L/min/m2)	2,65 ± 0,65	2,42 ± 0,55	2,88±0,25	3,47 ± 0,95	**0,043**
PVR (uWood)	10,0 ± 5,6	11,2 ± 5,2	6,1 ± 5,38	10,2 ± 7,8	0,341
Number of vasodilators	2,22 ± 0,80	2,57 ± 0,51	1,67 ± 1,15	1,25 ± 0,50	**0,008**
Parenteric prostanoids (%)	46,2	61,2	33,3	0	**0,018**
COMPERA Score	1,92 ± 0,57	2,1 ± 0,55	1,85 ± 0,29	1,23 ± 0,29	**0,007**

*Continuous variables are expressed as mean ± standard deviation with exception of NT-proBNP, 6MWT and RA area expressed as median.
FAC- Fractional Area Change; FC- Functional Class, HF- Heart Failure; PVR- Pulmonary Vascular Resistance; RA- Right Atrial; RAP- Right Atrial Pressure; SvO2- Mixed venous oxygen saturation; SaO2- Arterial Saturation; WHO – World Health Organization; 6MWT– Six-minute walking test.

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PO 158. IS DIASTOLIC DYSFUNCTION A GOOD SURROGATE OF FUNCTIONAL CAPACITY IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY?

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Introduction: Cardiopulmonary exercise test (CPET) provides detailed information about hypertrophic cardiomyopathy (HCM) patient's functional capacity, which is in part influenced by left ventricular diastolic dysfunction (DD). The correlation between functional capacity and echocardiographic parameters of DD has not yet been well validated.
Objectives: To study the correlation between different resting diastolic echocardiographic parameters with functional capacity in HCM patients (P).
Methods: HCM patients seen at outpatient cardiomyopathy clinic at a tertiary centre were included. All patients underwent comprehensive transthoracic echocardiogram and CPET. The variables were analysed using Spearman rank correlation.
Results: Of 67 P with HCM (mean age 57 ± 14 years, 41 males), 38 P (56.7%) were in New York Heart Association (NYHA) functional class I, 24 (35.8%) in class II and 5 (7.5%) in class III. Obstructive HCM was present in 46 (68.7%), with a maximum left ventricular wall thickness of 20 (7) mm and GLS of -14.9 (4.5)%. Echocardiographic evaluation of diastolic dysfunction is reported in the table. CPET respiratory exchange ratio was 1.03 ± 0.09 revealing adequate exercise effort, mean time of exercise was 12.4 ± 4.3 minutes. The remaining evaluated CPET parameters are reported in Table 1. E/e' and peak VO2 showed an inverse correlation (correlation coefficient – 0.439, $p < 0.01$). A correlation was also found between: E/e' and VE/VCO2 (correlation coefficient 0.271, $p = 0.027$); E/e' and optimal point of ventilation (correlation coefficient 0.34, $p = 0.006$); TDI e' septal and pVO2 (correlation coefficient 0.37, $p = 0.009$); E- wave and pVO2 (correlation coefficient – 0.320, $p = 0.008$).
Conclusions: In HCM patients, DD correlates with impaired functional capacity, with the strongest correlation found between E/e' and pVO2.

PO 159. TAVI VIA ALTERNATIVE ACCESS ROUTES: PATIENT SELECTION AND 10-YEAR CENTER EXPERIENCE

Bruno M. Rocha, Tiago Nolasco, Rui Teles, Gonçalo Cunha, Pedro Lopes, Catarina Brizido, Gustavo Mendes, Francisco Gama, Mariana Gonçalves, Afonso Felix Oliveira, Daniel Matos, Christopher Strong, Sérgio Madeira, Nelson Vale, Márcio Madeira, João Brito, Luís Raposo, Pedro Gonçalves, Henrique Mesquita Gabriel, Carlos Aguiar, Miguel Sousa-Uva, Miguel Abecasis, Manuel Ameida, José P. Neves, Miguel Mendes.

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Femoral access is considered the gold standard for transcatheter aortic valve implantation (TAVI). However, this route might be precluded due to the presence of tortuosity, small vessel diameter and/or peripheral artery disease. We aimed to investigate TAVI through an alternative access (AA), focusing on the selection criteria and clinical outcomes compared to the femoral route (TF).
Methods: We conducted an all-comers longitudinal single-centre prospective registry in which a TAVI was performed. The feasibility, safety and efficacy of TAVI by means of an access route other than standard TF were assessed, according to the VARC-2 criteria. The prospective surgical criteria used at our institution to accept an AA route were: a) TF deemed inappropriate; b) acceptable haemorrhagic risk; c) acceptable general anaesthesia risk; and d) adequate anatomy and diameter within acceptable range (subclavian, axillar, transaortic) or e) age < 85 years and non-frail patient (transapical). The primary endpoint was all-cause death at 1-year.
Results: From 2008 to 2018, there were 548 patients submitted to TAVI [median age 84 (79-87) years, males 45.4%]. An AA route was used in 100 patients (79 trans-apical, 9 trans-aortic, and 12 trans-subclavian), with a decreasing rate over follow-up (-11% per year). Compared to TF, these patients were younger [80 (77-84) vs. 85 (80-87) years; $p < 0.001$) with a similar baseline surgical risk as per EuroSCORE II [5.1 (3.3-9.0) vs. 4.7 (3.3-7.0); $p = 0.410$). AA patients presented a higher burden of atherosclerotic disease, namely coronary (54.0 vs. 41.3%; $p < 0.001$) and peripheral artery disease (35.0 vs. 16.5%, $p < 0.001$) despite a lower

Table 1. Echocardiographic and CPET parameters

Echocardiographic findings	Values
E- wave (cm/s)	79.9 ± 23.1
A - wave (cm/s)	70.4 ±25.8
E/A ratio	1.08 (0.83)
DT (ms)	187 (75)
e' septal (cm/s)	5 (3.0)
e' lateral (cm/s)	8 (4.0)
a' septal (cm/s)	7.50 (4.0)
a' lateral (cm/s)	8.20 ± 3.35
E/e' ratio	12.8 ± 4.8
peak velocity of TR jet (cm/s)	247± 38.6
LAi (ml/m²)	47.27 ± 16.5
RV-RA gradient (mmHg)	24 (10)
CPET findings	**Values**
pVO2 (ml/kg/min)	21.01 ± 6.08
% of max predicted VO2 (%)	87 ± 21.7
VE/VCO2 slope	29 (5.3)
Time to AT (min)	6 (6.0)
VO2 in AT	14.27 ± 3.5
Optimal point of ventilation	24.1 ± 4.48

Legend: mitral peak velocity of early filling = E-wave, mitral peak velocity for late filling = A-wave, deceleration time = DT, e'= tissue Doppler e' wave, a'= tissue Doppler a' wave, tricuspid regurgitation= TR, left atrium volume index= LAi, right ventricle =RV, right atrial = RA, peak oxygen consumption = pVO2, percentage of maximum predicted VO2 = % of max predicted VO2, minute ventilation/carbon dioxide production = VE/VCO_2, anaerobic threshold=AT

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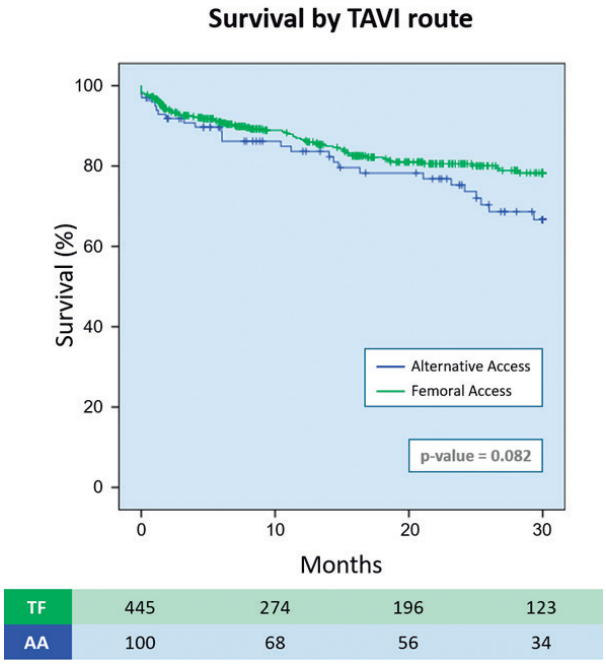
number of other comorbidities (e.g. glomerular filtration rate < 50 mL/min: 53.1 vs. 64.8%; p = 0.030). Left ventricular ejection fraction (56 ± 13 vs 55 ± 12%; p = 0.203) and aortic stenosis severity (e.g. valve area: 0.70 ± 0.19 vs. 0.67 ± 0.18cm²; p = 0.302) were similar between groups. Haemorrhagic events (minor or major) following TAVI were less often documented in the AA group (11.0 vs 21.7%; p = 0.015), contrasting with *de novo* atrial fibrillation (18.5 vs 7.6%; p = 0.048). Overall, 67 patients met the primary endpoint (18.8 vs 16.2%; p = 0.584). After adjusted multivariate analysis, the independent predictors of one-year mortality did not include the TAVI access route.



Conclusions: In the first 10 years of experience, 1 in every 6 patients was treated with a TAVI by means of an AA, most often trans-apically initially and, nowadays, via a trans-subclavian approach. The use of meticulous prospective selection criteria seems to explain the one-year similar results, regardless of the access route.

PO 160. INFEÇÃO COVID-19 EM DOENTES COM HIPERTENSÃO ARTERIAL PULMONAR - IMPACTO IMEDIATO E FOLLOW-UP A CURTO PRAZO

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Introdução: A Hipertensão Arterial Pulmonar (HAP) é uma doença crónica, grave e de elevada mortalidade, apesar dos avanços da ciência. Conhece-se pouco acerca do impacto da infeção COVID 19 nestes doentes (dts), mas dado o compromisso cardiopulmonar era previsível agravamento clínico com potencial de descompensação da doença de base.
Objetivos: Analisar o impacto infeção COVID 19 em dts com HAP e verificar se houve agravamento da doença de base.
Métodos: Estudo prospetivo, quantitativo e longitudinal de dts com HAP infetados com COVID 19. Foram retirados dados clínicos da última consulta de seguimento programada antes da infeção COVID 19, feito acompanhamento diário telefónico aos dts durante o período de infeção e programada nova consulta de reavaliação 1 mês após a cura.
Resultados: Num universo de 50 dts em seguimento com o diagnóstico de HAP, foram identificadas 3 infeções COVID 19, confirmadas por teste de PCR até à data de submissão deste resumo. Todas dts do sexo feminino, idade média 38 anos. 2 dts apresentavam HAP associada a cardiopatia congénita complexa e 1 doente HAP hereditária com mutação no gene BMPR2 identificada. Todas sob terapêutica vasodilatadora pulmonar (TVP), incluindo duas sob prostanoides parentéricos, das quais uma sob oxigénio de alto fluxo a 30L/min no domicílio com classe funcional avançada mesmo sob terapêutica médica optimizada e outra em lista de espera

para transplante pulmonar. Os sintomas associados à COVID-19 foram ligeiros (febre e mialgias) e duraram de 3 a 11 dias, sem necessidade de internamento. Na avaliação 1 mês após a cura, as 3 dts não objetivavam nenhum agravamento da doença de base, realizaram os exames habituais de seguimento: analises, eletrocardiograma (ECG), ecocardiograma, radiografia de tórax e teste da marcha. No ECG e na radiografia de tórax não se observaram alterações de novo. O N-terminal de peptídeo natriurético cerebral (NT pro-BNP) da D1 passou de 3.142 a 3.584 pg/mL, na D2 de 300 a 255 pg/mL e na D3 288 a 314 pg/mL; o ecocardiograma da D1 mantinha aurícula única de grandes dimensões, gradiente VD-AD de 73 mmHg passou para 76 mmHg e continuava sem derrame, a D2 mantinha a aurícula direita (AD) dilatada, gradiente VD-AD de 109 mmHg passou para 67 mmHg com melhoria da função do ventrículo direito e continuava sem derrame e a D3 mantinha AD dilatada, gradiente VD-AD de 88 mmHg passou para 89 mmHg com melhoria da função do ventrículo direito e continuava sem derrame; no teste da marcha a D1 não tinha realizado na visita anterior por fadiga fez agora 240m (34.6% do previsto), a D2 tinha feito 540 (76%) fez agora 530m (81,5%) e a D3 tinha feito 490 (77%) fez agora 530m (85%).
Conclusões: O impacto da infeção COVID 19 nas 3 dts com HAP teve uma evolução muito favorável na fase aguda e parece ter sido nulo num follow-up a curto prazo (realizado 1 mês após a cura). São precisos mais estudos e com maior número de participantes, para compreender melhor a resposta dos dts com HAP à infeção COVID 19.

PO 161. CASES REPORT OF MYOCARDITIS IN A PORTUGUESE TERTIARY HOSPITAL

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Introduction: Myocarditis is an inflammatory disease of the myocardium with heterogenous etiology, presentation, treatment, and prognosis. Endomyocardial biopsy (EMB) is the diagnostic gold standard but is done infrequently.
Methods: Single center retrospective study of consecutive myocarditis admissions in the Cardiology Department of a Portuguese tertiary center, from January of 2017 to December of 2020. The myocarditis diagnosis was done by magnetic resonance imaging (MRI) or EMB. Clinical, analytical, imagiological and histological data were analyzed.
Results: A total of 42 patients were included with median age of 30.5 years and 78.6% men. None had previous cardiopathy. Chest pain was the main symptom in 92.9% of patients and 7.1% had acute heart failure. One patient presented with symptoms lasting more than 1 month and two had fulminant course. Previous respiratory infection and gastroenteritis were present in 42.9% in 21.4% of the patients, respectively. There was ST-segment deviation in 52.4% of cases. Median maximum troponin I was 9,200 ng/L (232-453 ng/L). Median C-reactive protein and *B-type natriuretic peptide* at admission were 47 mg/dL (1.4-222 mg/dL) and 33 mg/dl (10-986 mg/dl), respectively. Systolic left ventricle (LV) function at echocardiogram was preserved in most patients (85.7%), 2 patients had severe systolic biventricular dysfunction. The myocarditis diagnosis relied in EMB in 11.9% of cases and in MRI in 88.1%. Diagnostic compatible T2-weighted and late gadolinium enhancement images were present in 83.7% and 97.2% of patients, respectively. In patients submitted to EMB, etiology was idiopathic in two; one patient had viral myocarditis (parvovirus and herpes 6 virus) and was treated with intravenous immune globulin; and two patients had eosinophilic infiltrates in context of Churg-Strauss and Hypereosinophilic Syndromes and improved with corticotherapy. Three patients with fulminant and subacute course required extracorporeal membrane oxygenation. No deaths were registered. At discharge, most patients had preserved biventricular systolic function (95.2%), only one persisted with severe biventricular dysfunction.
Conclusions: Although most cases of myocarditis recover without sequelae, a minority progresses to inflammatory cardiomyopathy, as seen in this study. National and international registries are essential to help to determine prognosis predictors.

PO 162. THE IMPACT OF ADMISSION AT A HOSPITAL WITH CARDIOTHORACIC SURGICAL UNIT ONSITE IN THE SURGICAL MANAGEMENT OF PATIENTS HOSPITALIZED WITH INFECTIVE ENDOCARDITIS

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Introduction: Infective endocarditis (IE) is becoming ever more a surgical condition. However, only half of the patients with a clinical indication to surgery undergo surgical intervention.
Objectives: We aimed to understand the impact of first admission in a hospital with onsite cardiac surgical unit (CSU) in the surgical management of patients hospitalized with IE.
Methods: A nationwide retrospective study of patients hospitalized with infective endocarditis, between 2010 and 2018, in Portugal.
Results: 7574 patients were hospitalized with infective endocarditis from 2010 to 2018 in Portuguese public hospitals. 937 (12.4%) patients had cardiac valve surgery during the first hospitalization for IE. The proportion of patients firstly admitted in a hospital with a cardiothoracic surgery unit on-site undergoing surgery was substantially higher compared to only medical management patients (616, 65.7% versus 2,686, 40.5%, p > 0.001). This variable was a significant predictor factor for cardiac valve surgery in the context of active IE (OR 4.36, 95%CI 3.65-5.2). Medical-surgical patients admitted in a hospital with surgical unit on-site presented a lower proportion of cardiac valve, prosthetic valve, infection with *Staphylococcus* and *Enterococcus* and complications such as acute heart or renal failure, ischemic stroke and systemic embolism compared to patients admitted in a hospital with no CSU and then transferred. No significant differences were noted regarding gender, age, or mortality rate.
Conclusions: In Portugal, patients with active IE firstly admitted in a hospital with CSU onsite have a higher probability of undergoing surgical intervention. Additionally, clinical features of patients transferred from non-tertiary hospitals for cardiac surgery present higher complexity. It is crucial to further analyze factors influencing access to cardiac surgery in Portugal in the context of IE.

PO 163. TYPE OF VALVULAR SURGICAL PROCEDURE IN ACTIVE INFECTIVE ENDOCARDITIS IN PORTUGAL

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Introduction: Type of surgical procedure and timing have been a matter of debate among the scientific community in the context of active infective endocarditis.
Objectives: We aimed to characterize valvular involvement and surgical procedure in the management of patients hospitalized with IE submitted to surgery.
Methods: A nationwide retrospective study of patients hospitalized with infective endocarditis, between 2010 and 2018, in Portugal. Patients undergoing valvular surgical intervention during the index hospitalization were selected.
Results: 937 (12.4%) patients had cardiac valve surgery during the first hospitalization for IE in the 9-year analysis. Most patients underwent single valve intervention (73.9%).102 patients (10.9%) presented combined procedures with repair and replacement techniques. Left heart valves were more prevalent in surgical intervention. Aortic valve was the most frequently involved, with a significant predominance on replacement. When the mitral valve was involved, repair overcame replacement only in 2014 and 2015.
Conclusions: In Portugal, in patients submitted to surgery in the context of IE, left heart valves are more frequently affected, with a dominance of the aortic valve. Mitral valve replacement is still more prevalent than repair in the overall cohort of surgical patients with active IE.

PO 164. CLINICAL FEATURES AND OUTCOMES IN PATIENTS WITH ACTIVE INFECTIVE ENDOCARDITIS SUBMITTED TO VALVE SURGERY

Catarina Sousa

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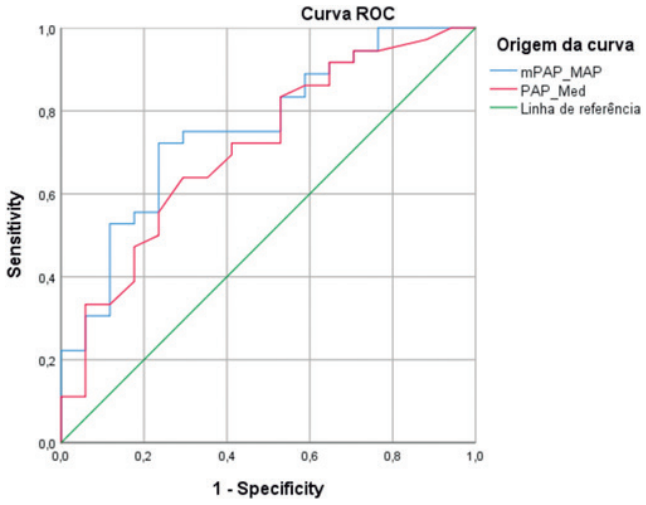
Introduction: In patients hospitalized with infective endocarditis (IE), up to half were submitted to surgery in observational studies from developed countries.
Objectives: We aimed to characterize clinical features and outcomes in patients hospitalized with IE submitted to surgery in a populational study.
Methods: A nationwide retrospective study of patients hospitalized with infective endocarditis, between 2010 and 2018 in Portugal. Patients undergoing valvular surgical intervention during the index hospitalization were selected.
Results: 937 (12.4%) patients had cardiac valve surgery during the first hospitalization for IE in the 9-year analysis. These were younger, predominantly male, with a higher prevalence of valve disease or valve prosthesis, a lower prevalence of comorbidities (diabetes mellitus, chronic renal or hepatic disease, cancer, or chronic lung disease), higher proportion of patients with *Streptococcus*. The mortality rate from the medical-surgical patients was lower than the mortality rate from non-surgical patients. In-hospital mortality rate (15.6%) with a stable estimated annual rate (p = 0.12). Independent prognostic factors of in-hospital mortality in IE patients submitted to surgery were: older age, female gender, previous coronary intervention, hemorrhagic stroke, acute renal failure and the presence of sepsis.
Conclusions: In Portugal, in patients hospitalized with IE, a stable surgical rate was noted in the 9-year analysis. Surgical intervention was associated with an 84.4% survival rate. Older age, female gender, previous coronary intervention, hemorrhagic stroke, acute renal failure and the presence of sepsis predicted higher mortality.

PO 165. THE RELATIVE PULMONARY TO SYSTEMIC PRESSURE RATIO AS A MEASURE OF PROGNOSTIC VALUE IN PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION – THE NEVER-ENDING QUEST TO IMPROVE RISK STRATIFICATION

João Grade, Ana Rita Pereira, Mariana Martinho, Bárbara Ferreira, Alexandra Briosa, Sofia Alegria, Filipa Ferreira, Rita Calé, Sofia Almeida, Hélder Pereira

Hospital Garcia de Orta, EPE.

Introduction: The relative pulmonary to systemic pressure ratio, calculated by mean pulmonary arterial pressure/mean arterial pressure (mPAP/MAP), has been already studied and of proven value in the context of cardiac surgery. However, little is known on the prognostic value of this parameter in patients with pulmonary arterial hypertension.
Objectives: Our aim was to assess the prognostic value of the relative pulmonary to systemic pressure ratio in patients with pulmonary arterial hypertension.
Methods: We performed a 9 year retrospective analysis of all patients with pulmonary arterial hypertension as diagnosed by right heart catheterization in a single expert centre. Medical records were analysed for demographic, procedural and outcome data.
Results: Of the 321 patients assessed and submitted to RHC, 82 patients had the diagnosis of pulmonary arterial hypertension and were analysed. The mean age at time of diagnosis was 47 ± 17 with a female preponderance (74%). In a median follow up of 5 ± 3.8 years; 24% of patients had an admission for cardiovascular (CV) causes, 39% progressed to the use of parenteric prostanoids, 2.4% were submitted to lung transplant and 36.6% had died; A higher mPAP/MAP correlated significantly with death (Mann-Whitney U; p = 0.03) and a compositive of admissions for CV causes, progression to intravenous prostenoids, lung transplant and death (Mann-Whitney U; p = 0.006). In a model of logistic regression the sole use of mPAP/MAP parameter had a higher predictive ability for the compositive of events than a model based on the mean pulmonary artery pressure (OR: 1285 95%CI 6.54-252728 p: 0.008; r^2 0.23 vs OR: 1.051 95%CI 1.001-1.104 p: 0.046; r^2 0.11). The ROC curve analysis demonstrated a greater discriminative capability of the model as well (AUC 0.76; p = 0.002 vs AUC 0.71; p = 0.016), with the best cut-off value for mPAP/MAP defined as 0.5139 for a sensitivity of 70% and a specificity of 71%.



Conclusions: The evaluation of the relative pulmonary to systemic pressure ratio may serve as a useful prognostic indicator, more adequate than the assessment of the mean pulmonary arterial pressure alone.

PO 166. PREVALENCE AND CLINICAL IMPACT OF LATENT OBSTRUCTION IN HYPERTROPHIC CARDIOMYOPATHY

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Introduction: Hypertrophic cardiomyopathy (HCM) is characterized by varying degrees of left ventricular outflow tract obstruction (LVOTobs). We aim to define the prevalence, clinical profile and impact of LVOTobs under physiological exercise in HCM patients (pts).
Methods: Single center retrospective study of consecutive HCM pts without LVOTobs at rest (resting gradient < 30 mmHg), referred for exercise stress echocardiogram (ESE) between 2015 and 2019. Significative latent obstruction was defined as a LVOT gradient ≥ 50 mmHg during exercise or at early recuperation.
Results: A total of 56 pts were included (64% men, mean age 57 ± 11 years, 61% septal HCM). The majority of pts (47; 84%) were in NYHA I functional class, 20 (36%) had history of syncope or pre-syncope (S/pS) and 7 (13%) had an implantable cardioverter defibrillator (ICD). Twelve (21%) pts had systolic anterior motion (SAM) of the mitral valve at rest. Thirty-five (63%) pts performed ESE under beta-blocker (BB) therapy. Mean exercise time was 8 ± 3 min. During ESE, 2 (4%) pts developed a LVOT gradient between 30 to 50 mmHg and 17 pts (30%) developed a significative LVOTobs gradient (mean 85 ± 18 mmHg). Pts with significative latent LVOTobs had more previous complaints of S/pS (59% vs 26%, p = 0.017), a tendency for a higher NYHA functional class (p = 0.082) and were more frequently on BB therapy (82% vs 18%, p = 0.043). Mean septum thickness was similar between groups (17 ± 0.7 vs 16 ± 0.6 mm, p = 0.536). The presence of SAM at rest was more frequent in the significative latent LVOTobs pts (p < 0.001). No differences were noted in exercise tolerance (p = 0.526). During a median follow-up of 43 (IQR 15-53) months, 7 (41%) pts with significative latent LVOTobs had a pre-syncope, 3 (18%) were diagnosed with atrial fibrillation and 2 (12%) had a cardiovascular admission. There was up-titration/initiation of BB therapy in 5 (29%) pts, referral for septal myectomy in 3 (18%) and ICD implantation

for primary prevention in 3 (18%) pts. No proper ICD shocks, sustained ventricular arrythmias or deaths occurred. Comparing significative latent to non LVOTobs pts, the first ones had more ICD implantation (log rank p = 0.04) and performed a surgical myectomy more frequently (log rank p = 0.018) during the follow-up.
Conclusions: In our study, significative latent LVOTobs was observed in 30% of pts. Its presence can have clinical implications in HCM pts approach and should be suspected in more symptomatic pts and when SAM is present at rest.

PO 167. STAPHYLOCOCCUS AUREUS INFECTIVE ENDOCARDITIS: PREDICTORS AND OUTCOME

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Introduction: Staphylococcus aureus (SA) is a frequent etiologic agent of infective endocarditis (IE) and is associated with destructive forms of the disease and a worse prognosis.
Objectives: This study aimed to assess which are the clinical predictors associated with IE by SA (IESA) and to compare its prognosis with that of IE by other or unknown agents (IEOA).
Methods: A retrospective study was carried out of consecutive patients diagnosed with IE in an institution between 2008 and 2018. Hospital records were consulted and clinical and laboratory variables were analyzed. Univariate and multivariate statistical analysis was performed using SPSS 20.0.
Results: Fifty eight patients with a diagnosis of IE were identified, with a mean age of 63 ± 13 years, 42 (72%) of whom were male. The aortic valve was the most frequently involved (19, 33%), followed by the mitral valve (18, 31%). Prosthetic valve involvement was found in 14 patients (24%). In 21 cases (36%) the etiologic agent identified was SA, 2 of which a methicillin-resistant variant. The demographic variables described above, as well as the laboratory variables analysed, did not differ significantly between the groups with IESA and IEOA. The identification of more than one vegetation (p = 0.033), the involvement of the right heart (p = 0.049), the presence of a chronic intravenous catheter (p = 0.011), and the absence of co-morbidities (arterial hypertension, diabetes mellitus, chronic lung or kidney disease and heart failure; p = 0.021) were significantly associated with IESA. However, only the last two variables were independent predictors of this entity (p = 0.019 OR: 25.5 and p = 0.005 OR: 14.5, respectively). In the analysis of prognosis, there were no significant differences in terms of in-hospital mortality (29% vs 28%) or endocarditis recurrence (5% vs 9%) between IESA and IEOA.
Conclusions: In this study, IESA was more prevalent in patients with fewer co-morbidities. Additionally, higher mortality has not been shown to exist in the group of patients with IESA, contrarily to what has been reported in many studies.

PO 168. RISK FACTORS FOR CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION – A REAL LIFE EXPERIENCE FROM A PORTUGUESE TERTIARY CENTER

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Introduction: Chronic thromboembolic pulmonary hypertension (CTEPH) is an increasingly diagnosed type of pulmonary hypertension, that is characterized by a chronic thrombotic obstruction of the pulmonary vessels. Although its pathogenesis remains unclear, there are multiple risk factors (RF) identified as being associated with this pathology.
Objectives: To evaluate the risk profile of the patients (pts) with CTEPH treated in our center, as well as to determine the representativeness of the established RF and to evaluate the impact on clinical outcomes.
Methods: Single center retrospective study analyzing pts with established CTEPH in what concerns presence of well-known RF, clinical and imaging characteristics, type of treatment chosen as well as long term outcomes.
Results: 82 pts, 72% from female sex, with a mean age of 62 ± 14 years old. 70% presented in NYHA class 3 or higher, the mean and median NT-proBNP levels were 2,242 ± 5,108 pg/mL and 599 pg/mL respectively, and the median PSAP value on echocardiogram was 86 mmHg. The first right-cath evaluation showed a median PAP value of 44 mmHg, median cardiac index of 2.24 L/min/m^2 and median pulmonary vascular resistance (PVR) of 9.33 wood U. 36 pts were submitted to pulmonary endarterectomy (PEA) (3 of them with subsequent need of balloon pulmonary angioplasty-BPA), 13 pts integrated the program of BPA in the first place and the rest stayed on vasodilator therapy. By the time of the analysis, 5 pts were still waiting to integrate BPA program and 2 pts were waiting for PEA confirmation. At the 6 month-follow-up, there was a significant reduction in NTproBNP levels (422 vs 1,606 pg/mL, p < 0.001), PSAP levels (37 vs 82 mmHg, p < 0.001), PAP levels (25 vs 43 mmHg, p < 0.001) and on PVR (4 vs 10 WU, p < 0.001). 23% of pts died. In what concerns established RF: 69.5% (n = 57) had at least one episode of clinical pulmonary embolism (PE), 12 of them submitted to fibrinolysis therapy during hospitalization. Previous deep venous thrombosis (DVT) was observed in 17 pts. Additionally, 18 pts were obese, 13 had history of neoplasm, 10 had hypothyroidism under replacement therapy, 4 had hematological disease such as antiphospholipid antibody syndrome. Pacemaker leads and splenectomy were present in 2 pts each. Regarding genetic mutations, 3 had the presence of antiphospholipid antibodies, 2 had mutation on beta 2 glycoprotein antibody and 1 had a mutation on the prothrombin gene. The majority of pts had a total of 1 or 2 RF (44% and 29% respectively). Between pts with 2RF, the most common combination was PE and DVT (29%), followed by PE and neoplasm (17%).
Conclusions: In our study, we confirmed the presence of those well-known RF for CTEPH, showing that our population has the same risk profile as those presented in other studies. The early identification of these common RF can help to identify at-risk pts, shifting the paradigm of treatment into a more preventive one and improving prognosis.

PO 169. CONGENITAL HEART DISEASE: A RETROSPECTIVE ANALYSIS FROM A TERTIARY REFERRAL CENTRE

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Introduction: Congenital heart disease is the most prevalent congenital malformation contributing to perinatal mortality. The aim of this study was to characterize its incidence and to establish survival in the first year of life.
Methods: Retrospective analysis of cases born in a central maternity hospital, diagnosed up to 72 hours after birth, during a period of 16 years. Results considered statistically significant if p < 0.05.
Results: Of the 47198 neonates born during the study period, 297 had congenital heart disease, 16% associated with syndromes or extra-cardiac disease. The incidence was 6:1,000. Left to right shunt lesions accounted for 211, followed by cyanotic (n = 46), non-cyanotic obstructive (n = 31) and miscellaneous (n = 9). Coarctation of the aorta was positively correlated to gestational diabetes (p = 0.014). Prenatal diagnosis contributed to 26%, mostly in the cyanotics, itself related to mortality (p < 0.001). Atrial septal defect were found more commonly in females (p = 0.02). Mortality due to heart disease was 3.4%. Overall survival of cyanotic disease cases was 88%, 81% and 78% at 28 days, 6 months and 1 year of age, respectively. For the miscellaneous cases was 91%, 91%, 90%, the obstructive cases was 97%, 97%, 97% and for the left to right shunt diseases was 99%, 98%, 98%, respectively.
Discussion: The incidence of congenital heart disease was 6:1,000, mostly left to right shunt lesions. Heart disease accounted for only half of deaths. Cyanotic diseases carry a higher nonspecific mortality rate, usually progressive during the first year of life.

PO 170. LUNG INVOLVEMENT IN PULMONARY HYPERTENSION ASSOCIATED WITH SYSTEMIC SCLEROSIS

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Introduction: Systemic sclerosis (SS) is an auto-immune disease characterized multiple organ involvement, including the lungs. Pulmonary hypertension (PH) is a common finding that can significantly impact prognosis. To this day, it is still a matter of debate the classification of PH in SS patients, specifically the impact of lung involvement.
Objectives: To analyse the population of patients followed in a referral centre for PH, from 2012 to 2020, with a diagnosis of SS and PH, according to the presence of interstitial lung disease (ILD).
Methods: Observational study including patients with the diagnosis of SS and PH followed between January 2012 and December 2020. Patients with a chest CT scan showing more than 20% total lung involvement due to ILD or with FVC inferior to 70% were classified as patients with lung involvement (LI), and the remaining as patients with no lung involvement (NLI). Demographic, clinical, analytical, echocardiographic (pulmonary artery systolic pressure [PASP], tricuspid annular plane systolic excursion [TAPSE], s' wave, Fractional area change [FAC], presence of pericardial effusion [PE]) and hemodynamic parameters (mean pulmonary arterial pressure [mPAP], mean right atrial pressure [mRAP], pulmonary vascular resistance [PVR], mixed venous oxygen saturation [SvO2], cardiac index [CI]) were evaluated. Distance recorded in the 6-minute walk test (6MWT) was also assessed. Given the small sample size relevant results are represented by the effect size (Cohen's d considered relevant > 0.7).
Results: 15 patients, all female, with PH due to SS were included, 7 in the group LI and the remaining 8 in the group NLI. Patients with LI had lower DLCO (34 vs 53%, p = 0.027), were younger (58.6 ± 15.8 vs 66.8 ± 13.7, p = 0.296) and had lower pO2 (64.4 vs 74.1 mmHg, p = 0.36). Regarding the hemodynamic parameters: CI (1.9 ± 0.62 vs 2.5 ± 0.51, Cohen's d = 1.1, p = 0.057), TAPSE (15.5 ± 2.9 vs 18.1 ± 3.7, Cohen's d = 0.79) and s' wave (9.4 ± 2 vs 10.9 ± 2.1, Cohen's d = 0.73) were lower in patients with LI. No significant differences were noticed in the remaining parameters: PASP (71.3 ± 22.8 vs 78.5 ± 17.5 mmHg, p = 0.5), FAC (31.2 ± 14.4 vs 35.1 ± 8.3%, p = 0.63), mPAP (40.1 ± 9.9 vs 40.4 ± 14.2 mmHg, p = 0.96), PVR (9.9 ± 6.9 vs 11.5 ± 5.8 UW, p = 0.65). Other markers of poor prognosis such as distance in 6MWT (322.9 ± 145.1 vs 333.3 ± 50.5 m, p = 0.16), SvO2 (63.7 ± 8.9 vs 67.49 ± 11.44, p = 0.49) and presence of PE (62.5 vs 57.1%) were similar in both groups. There were also no significant differences regarding PWP (p = 0.61), PADm (p = 1), or NT-proBNP (p = 0.28). Mortality rates were of 28.5% and 37.5% (p = 0.71) in the LI and NLI group, respectively.
Conclusions: In SS, patients with LI had worse CI and right ventricular longitudinal function when compared to patients with NLI. This difference was particularly marked for the CI. The remaining clinical and hemodynamic parameters were similar irrespective of lung involvement by SS.

PO 171. NEUROLOGICAL COMPLICATIONS IN INFECTIVE ENDOCARDITIS: RISK FACTORS AND OUTCOME

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Introduction: Neurological complications are frequent in patients (pts) with infective endocarditis (IE) and represent a major factor associated with an increased morbidity and mortality rate in that disease.
Objectives: The purpose of this study was to evaluate the incidence of neurological complications in pts with IE, determine the risk factors for their development and their influence on the clinical outcome.
Methods and results: Single-center retrospective analysis of pts with IE admitted during a 14-year period (2006-2020). We identified 222 episodes of IE (213 pts), 36.0% with evidence of systemic embolization. The most frequent site was the central nervous system (CNS) (n = 48; 21.6%). Patients with CNS embolization were predominantly male, with a mean age of 64 ± 12 years; the aortic valve was the valve that was more frequently involved; the most common agents were Staphylococcus (31.3%) and Streptococcus (27.1%). Patients presented with ischemic stroke in 79.2% of cases (haemorrhagic transformation in 21.1%), haemorrhagic stroke in 10.4%, mycotic aneurism in 12.5%, and myelitis/meningitis in 2.1%. During follow-up (mean 750 ± 1113 days), 31.3% were submitted to surgery (median time from admission to surgery 37 days; IQR 33-54); in-hospital mortality was 35.4% and 1-year mortality was 41.7%. Comparing with the global population, pts with CNS embolization were more likely to have diabetes (p = 0.002), no involvement of the right valves (p = 0.003) and pseudoaneurysm in transoesophageal echocardiography (p = 0.024). In addition, they had longer hospitalizations (54 vs 44 days; p = 0.007). There were no differences regarding mortality. Surgery was associated with reduced mortality, both in-hospital (p < 0.001) and at 1 year (p < 0.001). In multivariate Cox regression, cardiac surgery was a protective factor of 1-year mortality (HR 0.123; 95%CI 0.015-0.985, p = 0.048); heart failure and septic shock were risk factors of 1-year mortality (HR 3.7; 95%CI 1.3-10.9; p = 0.016, and HR 3.5; 95%CI 1.2-10.7; p = 0.025, respectively).
Conclusions: In our population the most common site of systemic embolization was the CNS, more often presented as ischemic stroke and the aortic valve was the valve that was more frequently involved. They had longer hospitalizations, but there were no differences in mortality. Surgery was a protective factor for in-hospital and 1-year mortality in pts with CNS embolization.

PO 172. A NEW RATIO WITH PAO2/FIO2 AND PULMONARY ARTERIAL SYSTOLIC PRESSURE IN THE PROGNOSIS OF INTERMEDIATE HIGH RISK PULMONARY EMBOLISM

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Introduction: Intermediate high (IH) risk pulmonary embolism (PE) defines a category of patients (P) at increased risk of haemodynamic decompensation. Therefore, it is important to develop tools to identify P who will have an unfavourable outcome. The ratio between arterial oxygen partial pressure (PaO2) to fractional inspired oxygen (FiO2) – P/F ratio - is associated with in-hospital mortality (IHM) in PE. Pulmonary arterial systolic pressure (PASP) is another prognostic factor, related with right ventricular (RV) pressure overload. This study evaluates the usefulness of a new ratio with P/F divided by PASP (P/F:PASP), reflecting both severity of respiratory failure and pressure overload, in the prognosis of P with IH risk PE.
Methods: All P admitted for IH risk PE in an Intensive Cardiac Care Unit (ICCU) for 10 years were included. P/F ratio was calculated with admission blood gas analysis and PASP was obtained with echocardiography at admission in ICCU. P/F:PASP ratio was considered low if inferior to its median. Need for fibrinolysis and IHM were assessed. Follow-up (FU) of 2 years for all-cause mortality was done. Statistical analysis used chi-square and Mann-Whitney U tests, binary logistic regressions and Kaplan-Meier curves.
Results: 101 P were studied (mean age 63 ± 17 years; 35.6% male). Mean P/F, PASP and P/F:PSAP were 264 ± 68, 45 ± 15 mmHg and 6.7 ± 3.3, respectively. P/F:PASP was considered low if inferior to 5.9. There was no difference in age, gender, comorbidities or Pulmonary Embolism Severity Index (PESI) between P with low or high P/F:PASP. However, low P/F:PASP ratio was associated with tachypnea at admission (p = 0.034), higher BNP level (p = 0.011), right precordial leads T-wave inversion (p = 0.029), presence of echocardiographic right ventricle dilation (p = 0.002) and lower TAPSE (p = 0.002). Among P who underwent fibrinolysis, 60.4% had low P/F:PASP and 39.6% had high P/F:PASP ratio (χ^2 = 3.32, p = 0.05). P/F:PASP ratio was a predictor of fibrinolysis (OR 0.83, 95%CI 0.72-0.96, p = 0.011), with lower ratio increasing the probability of fibrinolysis. This result was independent from PESI (OR 0.84, 95%CI 0.72-0.97, p = 0.015). P/F:PASP ratio was also a predictor of IHM (OR 0.62, 95%CI 0.38-1, p = 0.05). During FU, there was no

difference in mortality between P with low or high P/F:PASP ratio (8.5% vs. 10.4%, respectively; Kaplan-Meier χ^2 = 0.095; p = 0.758).
Conclusions: In IH risk PE, low P/F:PASP ratio was associated with analytical, electrocardiographic and echocardiographic risk features. In this study, P/F:PASP ratio was a predictor of short term prognosis, allowing identification of P at higher risk of fibrinolysis and IHM, but it was not useful for long term prognosis, as 2-year mortality was similar between the groups. Therefore, this ratio, as a measure of both respiratory failure and pressure overload, might allow refinement in risk stratification of P with IH risk PE.

PO 173. LONG-TERM RESULTS OF MITRAL VALVE REPAIR IN ACTIVE VS CURED ENDOCARDITIS

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Introduction: The first choice of treatment for mitral valve infectious endocarditis (IE) is valve repair. Whenever possible, it is preferable to complete a full cycle of antibiotics before surgery. However, in some cases early intervention is needed, which makes repair more technically challenging.
Objectives: Our aim was to evaluate the long-term results of mitral valve repair (MVRp) in active and cured mitral valve endocarditis.
Methods: From Jan2000 to Dec2019, 88 consecutive patients with active (53.4%) and cured (46.4%) mitral valve infectious endocarditis underwent MVRp. A diagnosis of IE was made using the Duke or modified Duke criteria. Cox proportional hazards models were used to analyse risk factors for late mortality, MAVE incidence and recurrent mitral valve regurgitation/reoperation. Kaplan-Meier methods were used to plot survival curves.
Results: Mean age was (Cured vs Active) 58.6% ± 13.5 vs 54 ± 14.8 (p = 0.133), female sex 18.2% vs 15.9% (p = 0.362); mean Euroscore II 2.95 ± 4.15% vs 8.84 ± 10.59% (p < 0.05), and mean LV ejection fraction was 61.02 ± 8.55% vs 59.68 ± 5.5% (p = 0.377), respectively. The mean extra-corporal circulation time was 64.5 ± 19.7 vs. 72.3 ± 27.5 min, p = 0.138 and aortic cross-clamping was 39.3 ± 17.9 vs. 43.9 ± 21.3min, p = 0.282, respectively. Thirty-day mortality was 0% vs. 1.1%, p = 0.348. No significant differences were found concerning 10-year survival (81.3 ± 8.1% vs. 70.5 ± 8.7%, p = 0.428, respectively). Freedom from major adverse valve-related events (MAVEs) at 10 years after surgery was 96.6 ± 3.4% vs. 79 ± 7.3%, p = 0.027, respectively and freedom from recurrence moderate-to-severe mitral valve regurgitation and/or reoperation at 10 years was 84.4 ± 6.7% vs. 55 ± 9.6%, p < 0.05.
Conclusions: Mitral valve repair in active infectious endocarditis was associated with increased perioperative risk. Although there are no differences in 30-day and long-term mortality, there was a significant increase in MAVEs and recurrence of mitral valve regurgitation and/or reoperation.

PO 174. CT SCAN FINDINGS PREDICT DECREASE IN PULMONARY VASCULAR RESISTANCE AFTER PULMONARY ENDARTERECTOMY

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Introduction: Chronic thromboembolic pulmonary hypertension (CTEPH) is a rare and distinct entity of pulmonary hypertension. Pulmonary endarterectomy (PE) is a potential curative strategy in this setting. However, it is a delicate procedure requiring significant expertise. There's no data regarding pre-procedural imagiological data by CT scan and hemodynamical response after PE.
Objectives: We aimed to correlate data from imagiological evaluation by CT scan with hemodynamic improvements after pulmonary angioplasty.
Methods: Retrospective single-center study of consecutive CTEPH patients with clinical that underwent PE. Demographic, clinical, laboratorial, imagiological and hemodynamic data were collected. For statistical analysis, Spearman correlation was used to continuous variables and Mann-Whitney test if the variables were categorical.
Results: We included 24 patients with mean age of 59.7 ± 12.9 years, 54.2% were female. The majority (87.5%) of patients were under specific vasodilatory therapy. The functional class at baseline was WHO II in 33% and WHO III in 67%. There was hemodynamic improvement after surgery, with changes in mean pulmonary artery pressure (mPAP) (49 (42-59) vs 26 (21.3-46.3), p 0.001), right atrial pressure (RAP) (11.5 (10-16) vs 6 (4-11), p 0.002), cardiac output (CO) (3.6 (3.2-4.2) vs 10.0 (8-12), p 0.0001) and pulmonary vascular resistance (PVR) (11.0 (7.3-15.1) vs 4.2 (2.5-6.2), p 0.001). We found an association between right ventricle to left ventricle (RV/LV) basal diameters ratio and RV/LV areas ratio in axial view and a decrease in pulmonary vascular resistance (p 0.006), with a RV/LV basal diameters ratio cut-off > 1.3 (AUC 0.848 p = 0.013) being the best predictor (sensitivity 100% and specificity 70.6%). We also found the same association with RV/LV basal diameters ratio and RV/LV areas ratio obtained in 4-chamber view (p = 0.048 vs p = 0.047). There was a strong correlation between the RV/LV diameter ratio measured on the standard axial view and in 4-chamber view (R 0.882 p = 0.0001).
Conclusions: In conclusion, we were able to prove that non invasive measurements in CT scan can predict a good outcome after PEA, particularly RV/LV basal diameters ratio with a cut-off of > 1.3 as the best predictor for a significant decrease in PVR. Moreover, axial determinations were able to provide good correlations, being much less time consuming, when compared to the determinations obtained by 4-chamber view.

PO 175. DIFFERENT D-DIMER ALGORITHMS TO RULE OUT PULMONARY EMBOLISM IN PATIENTS WITH CANCER: A COMPARATIVE STUDY

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Introduction: Pulmonary embolism (PE) is more prevalent in patients with cancer. D-dimers are a less useful test in these patients due to less specificity. Several algorithms have been developed, as an alternative to the fixed d-dimer cutoff, to avoid the excessive use of computed tomography pulmonary angiography (CTPA), but it is not clear which is the most accurate algorithm in PE patients with cancer.
Objectives: To compare the efficacy of 4 algorithms to rule out pulmonary embolism (fixed Ddimer cutoff, age-adjusted cutoff, YEARS and PEGed) in patients with active cancer.
Methods: Retrospective study of consecutive outpatients who presented to the emergency department and underwent CTPA for PE suspicion from April 2019 to February 2020. The clinical-decision algorithms were retrospectively applied. In fixed and age-adjusted cutoffs, high probability patients are directly selected for CTPA and the others perform CTPA if DDimer ≥ 500 μg/L or age × 10 μg/L within patients over 50 years, respectively. YEARS includes 3 items (signs of deep vein thrombosis, haemoptysis and whether PE is the most likely diagnosis): patients without any YEARS items and Ddimer ≥ 1,000 ng/mL or with ≥ 1 items and Ddimer 500 ng/mL perform CTPA. In the PEGeD, patients with high clinical probability or with intermediate and Ddimer > 500 μg/L or low probability and Ddimer > 1,000 μg/L are selected for CTPA.
Results: Of 409 patients with suspected PE, 87 (21.3%) patients had cancer. The prevalence of PE was 38% in cancer patients and 35% in patients without cancer (p > 0.05). Considering the 87 patients with cancer, sensitivity

	Sen(%)	Spec(%)
Conventional cutoff	100%	22,22%
Age-adjusted cutoff	100%	35,19%
YEARS	90,91%	44,44%
PEGED	90,91%	29,63%

Table 1 - Performance of each diagnostic algorithm

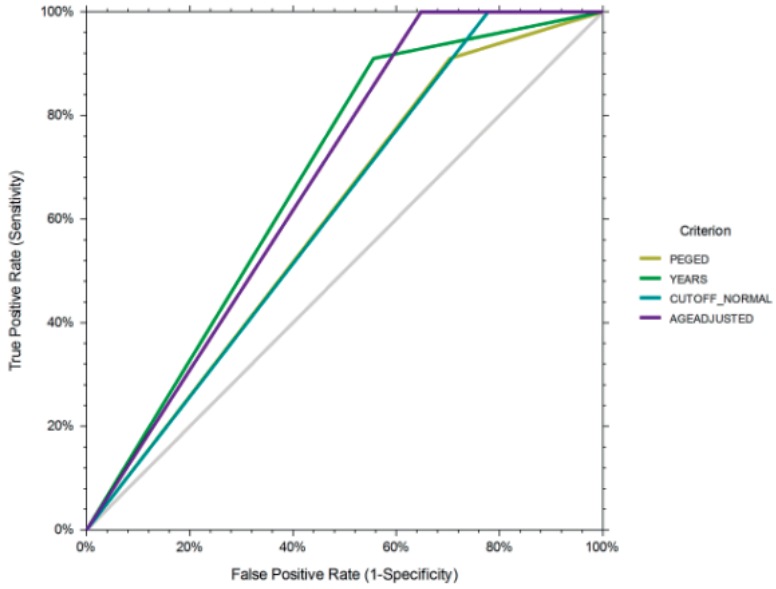

Figure 1 - Receiver operating characteristic (ROC) curve of each diagnostic algorithm

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and specificity of each algorithm are summarized in the table and ROC curves are presented in the Figure. Age-adjusted cut-off, compared to the conventional cutoff, had an AUC significantly higher (0.68 vs 0.61, p = 0.005). Despite both having 100% sensitivity, age-adjusted cutoff had a significant higher specificity compared to conventional cut-off (44% vs 35%, p < 0.05). Both YEARS and PEGED algorithms had significantly lower sensitivity (p = 0.003 and p = 0.002, respectively) and higher specificity (p < 0.001, for both) compared to conventional cutoff in patients with active cancer. The AUC of these two algorithms was not significantly different compared to conventional cutoff (p = 0.08 and p = 0.78, respectively).
Conclusions: Considering our results, age-adjusted cut-off seems to be the most accurate algorithm to rule out pulmonary embolism in active cancer patients.

PO 176. RIGHT VENTRICULAR OUTFLOW TRACT HYPERTROPHY ASSESSMENT AS A DIAGNOSTIC STRATIFICATION TOOL IN PATIENTS WITH PULMONARY HYPERTENSION

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Introduction: The right ventricle (RV) is a complex structure whose geometry changes in the presence of pulmonary hypertension (PH). The impact of chronic RV pressure overload on its remodeling process and the relationship with the hemodynamic phenotype and clinical group of PH is not stablished.
Objectives: To evaluate the relationship between the RV outflow tract (RVOT) thickness and the hemodynamic phenotype and clinical characteristics of PH patients.
Methods: Longitudinal observational study of consecutive patients with diagnosis of PH, based on hemodynamic criteria, and submitted to a high-resolution CT pulmonary angiography. PH was defined as precapillary [pulmonary arterial wedge pressure (PAWP) of 15 mmHg or lower], isolated post-capillary [PAWP higher than 15 mmHg and diastolic pressure gradient (DPG) less than 7 mmHg] or combined post-capillary (PAWP higher than 15 mmHg and DPG of 7 or more). The thickness, in millimeters, of the RVOT was measured in sagittal planes. The values obtained were compared with patient`s hemodynamic profile, clinical classification (Nice 2013), WHO functional class and the presence of signs of heart failure (HF) at presentation.
Results: 78 patients were included, 69.2% females, with mean age 67 years old (IQR: 26). 76% had precapillary PH, 21% combined post-capillary PH and 4% isolated post-capillary PH. Based on the clinical classification, 50% of the patients belonged to group 4, 28% to group 1, 11% to group 3 and 6% to group 2. The RVOT thickness did not differ significantly according to the WHO functional class, presence of right-sided HF signs at presentation or with hemodynamic classification. However, considering the clinical classification, the RVOT thickness varied significantly between groups (group 1: 6.1 ± 1.7 mm; group 4: 5.6 ± 1.2 mm; group 3: 5.2 ± 1.2 mm; group 2: 3.5 ± 0.3 mm, p = 0.002). By analysis of variance, it was verified that this variation was due to the lower thickness of the RVOT in group 2 when compared with the other groups (versus group 1, 3 and 4; respectively p < 0.001, p = 0.004 and p < 0.001).
Conclusions: The thickness of RVOT varies between clinical groups of PH, being significantly lower in patients from the group 2 patients. Based on this result we concluded that this parameter is useful in the diagnostic and etiological evaluation of patients with PH.

PO 177. STAYING TOO STILL: PULMONARY EMBOLISM DURING COVID-19 PANDEMIC

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Introduction: During the COVID-19 pandemic many countries have entered lockdown and imposed restrictions to dislocations. Since the 18th March, in Portugal, thousands of people have been confined to their homes. While hospital admissions for COVID-19 patients increased exponentially, admissions for non-COVID-19 patients decreased dramatically. However, it remains unclear whether lockdown-related immobility can contribute to the increased incidence of pulmonary embolism.
Objectives: To compare the incidence of pulmonary embolism (PE) during the lockdown period (from April 1 to May 31, 2020) and the reference period in 2019.
Methods: Retrospective study of consecutive outpatients who presented to the emergency department of a tertiary hospital and underwent computed tomography pulmonary angiography (CTPA) due to suspicion of PE.
Results: Compared to the same period of 2019, the lockdown period was associated with a significant increase (62%, p = 0.012) in PE diagnosis (29 *vs* 18 patients). PE patients during lockdown were older (median age 71 years; interquartile range [IQR] [60-85] *versus* 59 years [44-76]; p = 0.046) and have lower prevalence of active cancer (14% *versus* 33% in the reference period). Women represent 55% (n = 16) of patients in lockdown group (*versus* 50% in 2019 group). Clinical probability (GENEVA score) was similar in both groups (median score 2.72 in lockdown group and 2.50 in reference group, p = 0.452). None of the patients with PE was diagnosed with COVID-19.
Conclusions: Our study suggests a marked increase in PE diagnosis during lockdown period compared to the reference period, which can be explained by the overall reduction in physical activity due to teleworking and closure of gyms and sports activities. These data reinforce the importance of promoting home-based physical activity programs. Furthermore, the role of pharmacological or mechanical thromboprophylaxis in this scenario remains unclear and further studies will be needed to prove it.

PO 178. AORTIC VALVE REPLACEMENT IN SEVERE AORTIC STENOSIS: A ROBUSTE IMPACT IN CARDIAC REVERSE REMODELLING

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Introduction: Aortic stenosis (AS) is the most common valve disease and a prototype model for afterload-induced heart failure. Progressive aortic valve stenosis affects the left ventricle, which adapts with left ventricular (LV) hypertrophy (LVH). We aimed to assess cardiac reverse remodeling parameters after aortic valve replacement in patients with severe aortic stenosis.
Methods: We conducted a retrospective, observational study of 50 patients with previous diagnosis of severe aortic stenosis, submitted to surgical or percutaneous valve replacement between 2011 and 2017. All underwent a comprehensive echocardiography, at baseline and 1-year after valvular replacement with evaluation of cardiac structure and function (LV ejection fraction (LVEF), volumes and diameters, mass, stroke volume (SVi) and septal (SIV) and posterior (PW) wall thickness and right ventricular fractional change (FAC)) plus the assessment of cardiac mechanics with 2D speckle-tracking echocardiography focusing on LV global longitudinal strain (GLS), and the Left atrium (LA) peak longitudinal strain (PALS).
Results: Mean age was 79 ± 3 years and 58% were male. At baseline, 88% were on NYHA II and 12% in NYHA III-IV functional class. Most of the patient were submitted to surgical replacement (n = 48). Functional class improved significantly, 1-year after valve replacement, most patients were in in NYHA I (76%), p < 0.001. Regarding echocardiography, we found a significant improvement in LV mass, SIV, PW, and SVi [-31 ± 50 g/m^2 (95%CI -46 to -16, p < 0.001), -1.6 ± 2.6 mm (95%CI -2.3 to -0.8, p < 0.001), -1.7 ± 2.3 mm (95%CI -2.4 to -1.1, p < 0.001) and 4 ± 12 mL/m^2 (95%CI 0.2 to 7.8, p = 0.041), respectively], although there was a discrete decrease in LVEF without statistical difference. LAV had also a significant decrease, -11 ± 13 mL (95%CI -15 to -7, p < 0.001). Regarding the assessment of cardiac mechanics, we identified an improvement in GLS [-15 ± 5 to -17 ± 5%, -2.5 ± 6% (95%CI -4.7 to -0.4, p = 0.023)], and PALS, the last one without statistical difference.
Conclusions: We observed that in patients with severe aortic stenosis submitted a valve replacement had 1-year significant clinical improvement, who may be explained by a robust impact on cardiac reverse remodelling.

PO 179. PROGNOSTIC VALUE OF CARDIAC BIOMARKERS IN ACUTE PULMONARY EMBOLISM: CAN IT ADD SOMETHING?

Fabiana Silva Duarte, Maria Inês Barradas, Luís Oliveira, Cátia Serena, Raquel Dourado, António Fontes, André Monteiro, Carla Almeida, Carina Machado, Emília Santos, Nuno Pelicano, Miguel Pacheco, Anabela Tavares, Dinis Martins

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Introduction: Acute pulmonary thromboembolism (PE) is a life-threatening disease. Mortality in PE still remains very high in spite of progress in diagnostic tools. Cardiac biomarkers like lactate, NT-proBNP and troponin I have been reported to predict prognosis of acute PE however, the prognostic importance of these factors on long-term mortality is not known.
Objectives: To assess the prognostic role of biomarkers lactate, NT-proBNP and troponin I in acute PE.
Methods: We retrospectively assessed 131 consecutive patients diagnosed with acute PE between January 2017 and October 2020. Prognostic impact of cardiac biomarkers lactate, NT-proBNP and troponin was assessed. Receiver operating characteristic curve analysis, survival analysis and multivariate Cox proportional hazards analysis were implemented as statistical analysis methods.
Results: Out of 131 patients with acute PE, the median age was 67.6 ± 15.3 years and 71.0% were female. Mean follow-up was 44.8 ± 37.3 months. Overall in-hospital mortality was 8.4%, 30-day mortality 13.0% and 1-year mortality 20.6%. Twenty-six patients (19.8%) had a recent hospitalization and 21 (16.0%) a medical history of active cancer. ROC curves shown that lactate has a good discriminatory power for in-hospital mortality, with an area under the curve (AUC) of 0.84 and p-value 0.001, unlike NT-proBNP (AUC 9.45, p-value 0.76) and troponin (AUC 0.64, p-value 0.12). Serum lactate equal or superior to 2.05 mmol/L were associated with higher in-hospital mortality (odds ratio [OR] 23.1, 95% confidence interval (CI) 2.8-187.7), when compared with lower levels. The impact of this parameter was independent of hypotension, tachycardia or active neoplasia (p-value 0.006, OR 21.3, 95%CI 2.4-187.3).
Conclusions: This study revealed that lactate has a better discriminatory power when compared to NT-proBNP and troponin in predicting prognosis in acute PE patients. Its routinely addition to current stratification tools could be of interest.

PO 180. PREVALENCE AND DETERMINANTS OF RIGHT VENTRICULAR DYSFUNCTION IN PATIENTS WITH SEVERE SYMPTOMATIC HIGH GRADIENT AORTIC STENOSIS

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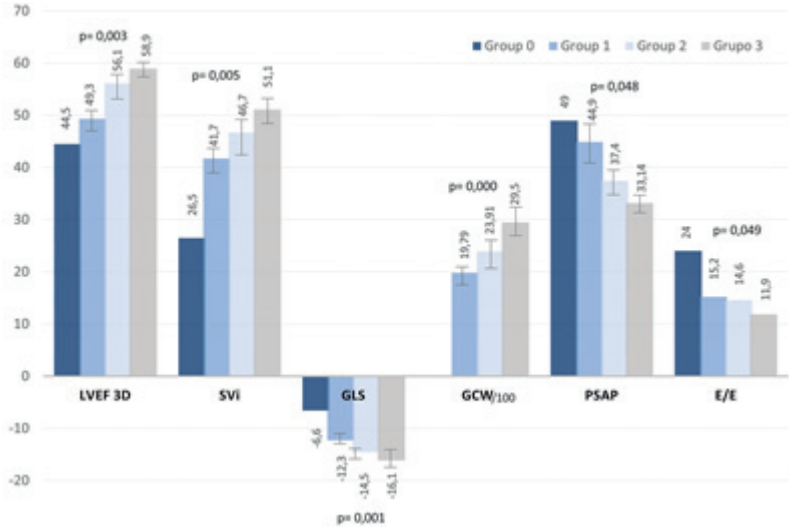
Introduction: Right ventricular (RV) function in aortic stenosis (AS) has been largely neglected. Recently it was demonstrated that right ventricular



PO 180 Figure

impairment may be influenced by left ventricular (LV) function and afterload, well before overt pulmonary hypertension development.
Objectives: To describe the prevalence of RV dysfunction in a group of patients with severe symptomatic aortic stenosis (AS) and its relation to LV function parameters and afterload.
Methods: We prospectively studied 93 consecutive patients (age: 73 years [IQR 68-77] years, 55% women) with pure severe symptomatic high gradient aortic stenosis: mean transaortic pressure gradient: 57.0 mmHg [IQR 46.9-71.1]; aortic valve area: 0.72 cm^2 [IQR 0.61-0.88]; indexed stroke volume: 48.8 ± 1.5 mL/m^2 (11 patients with low-flow AS), preserved LV ejection fraction (EV) (LVEF: 56.0% [51.0-61.3]; GLS: -14.5% [IQR -16.1- -10.6]), with no previous coronary artery disease and no history of cardiomyopathy. Beyond complete transthoracic echocardiography, all patients underwent cardiac magnetic resonance (CMR) for LV myocardium tissue characterization (late gadolinium enhancement and extracellular volume). Normal RV function was defined according to TAPSE ≥ 17 mm, tricuspid annular systolic velocity ≥ 12 cm/s, mean free wall longitudinal strain ≤ -20%. Patients were divided into four groups: (0) – all three RV parameters below normal (1.1%), (1) - 1 normal parameter (12.9%), (2) - 2 normal parameters (44.1%), (3) - 3 normal parameters (41.9%). Indexes of LV systolic and diastolic function, CMR derived LV geometric remodeling, hypertrophy and tissue characterization, aortic valve disease severity and afterload were compared across the 4 groups of patients. We tried to identify predictors of RV dysfunction (group 0.1,2 vs. group 3) at multivariate regression analysis.
Results: Left ventricular performance parameters, diastolic and myocardial work indexes were significantly different across the groups (Figure). Neither AV severity indexes nor LV tissue characterization were distinct. At multivariate analysis only global constructive work was an independent predictor of RV dysfunction.
Conclusions: RV dysfunction is common in this group of patients with severe high gradient aortic stenosis and preserved ejection fraction**.** RV impairment is significantly related to several LV systolic and diastolic parameters and also to LV afterload, probably accounting for RV-LV interdependence.

PO 181. PATTERNS OF LATE GADOLINIUMENHANCEMENT IN ACUTE MYOCARDITIS – DOES IT MAKE THE DIFFERENCE?

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Introduction: Cardiac magnetic resonance (CMR) is used as a reference standard in the diagnosis of patients (pts) with acute myocarditis (AM) since it allows identifying myocardial damage non-invasively. The presence of late gadolinium enhancement (LGE) is associated with increased risk for adverse events but whether its location and pattern have clinical implications it is not completely established. The aim of this study was to determine the LGE distribution and correlate it with other myocardial damage indicators in AM patients.
Methods: Retrospective study of patients consecutively admitted with clinically suspected AM and fulfilling 2 or more CMR Lake Louise criteria, in one center, between January/2016 and September/2019.
Results: We included 35 patients (32 ± 12 years, 94% males; 54% smokers). The mean length of hospital stay was 6 ± 3 days. The vast majority (94%) presented subepicardial LGE – being the inferior wall the most frequently involved (64%), (followed by inferolateral 61%, anterolateral 52%, anterior 51%; involvement of the septum was present in only one patient). The distribution of LGE enabled the identification of 3 main patterns: IFL: inferior + inferolateral wall (43%); AL: anterior + anterolateral wall (36%) and M: mixed pattern (21%); At admission, clinical presentation was similar in all groups, being chest pain the most common symptom. The mean number of segments involved was 4.8 ± 1.6 and was not different between the groups (p = 0.356). Analysis by pattern of LGE distribution didn´t show significant differences. However, analysis by wall revealed that the presence of LGE in the anterior wall, irrespectively of the pattern, was associated with higher end diastolic volumes, higher NT-proBNP and peak troponin levels (all p < 0.05). No significant differences regarding inflammatory parameters were found. Ejection fraction and cardiac output tend to be lower, even if this difference is not statistically significant. In univariate analysis, only the presence of LGE in anterior wall was a predictor of in-hospital non-fatal arrhythmic events (OR 6.2, CI95% 1.1,-36.2; p = 0.042).
Conclusions: Not all LGE patterns seen in acute myocarditis are equivalent, and patients with anterior wall LGE seem to have more myocardial damage, regardless of the number of segments affected or pattern. Long term follow up is warranted to asses prognostic implications of this finding.

PO 182. AORTIC MORPHOLOGY AND DISTENSIBILITY INFLUENCE CLINICAL OUTCOMES AFTER AORTIC COARCTATION TREATMENT

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Introduction: Aortic coarctation is a systemic vascular disease that predisposes patients to several comorbidities, even after successful treatment. Our aim was to investigate the role of aortic morphology and distensibility on relevant outcomes in patients with treated aortic coarctation.

Methods: Asymptomatic adolescents and young adults with treated aortic coarctation with no gradient or with borderline gradients (≥ 20 and ≤ 25 mmHg) were prospectively evaluated. Echocardiography was performed at rest and peak exercise. Pulse wave velocity (PWV) was evaluated between the right carotid and right radial arteries. Aortic hypoplasia was calculated as the ratio of narrowest diameter of the aortic arch to aortic diameter at the diaphragm level (AoArch/AoDiaphr) by cardiac MR. Univariate and multivariate linear regression models were used to evaluate the impact of PWV, AoArch/AoDiaphr, and isthmic Doppler gradient at rest (gradr) and peak exercise (gradp), on the following variables: systolic blood pressure (SBP) at rest and peak exercise, ambulatory 24-hour SBP, and indexed left ventricular mass (ILVM).
Results: Our sample comprised 43 patients (60.5% male), with a mean age of 21.2 years (range 12–40), at a mean of 14.6 years (range 0.6–34.0) after aortic coarctation treatment. Office SBP correlated with PWV (β = 2.9, p = 0.011), AoArch/AoDiaphr (β. = -44.1, p = 0.01), gradr (β = 0.8, p = 0.042), and gradp (β = 0.5, p = 0.001). Multivariable analysis identified PWV (p = 0.006) and gradp (p = 0.001) as the strongest determinants of office SBP (adjusted R^2 = 0.36). PWV was significantly associated with mean nocturnal SBP (β = 2.3, p = 0.031), but not with mean 24-hour ambulatory SBP (β = 1.8, p = 0.052). Peak exercise SBP was determined by gradp (β = 1.0, p = 0.002). Patients in the group with borderline gradient had a higher SBP at rest and with exercise (p = 0.001 and p = 0.014, respectively). Finally, ILVM was inversely associated with AoArch/AoDiaphr (β = -50.5, p = 0.033).
Conclusions: Aortic coarctation outcomes at follow-up are influenced by morphological and functional aortic properties with variable impact. Higher SBP at rest (office visits and night time) is related to a lower distensibility. Higher exercise SBP is dependent of higher isthmic gradients during exercise. The degree of aortic arch hypoplasia is the major determinant of ventricular hypertrophy. These results have implications on the type of routine evaluation.

PO 183. IMPACT OF PRENATAL DIAGNOSIS OF COARCTATION ON SHORT- AND LONG-TERM CARDIOVASCULAR OUTCOME

Miguel Fogaça da Mata, Mariana Lemos, Marta Martins, Tchitchamene Nelumba, Susana Cordeiro, João Rato, Ana Teixeira, Graça Nogueira, Isabel Menezes, Rui Anjos

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Introduction: Prenatal diagnosis of congenital heart disease has become increasingly more frequent. We investigated the cardiovascular impact of prenatal diagnosis on pre-operative course and short-, mid-, and long-term follow up of surgically corrected neonatal coarctation.
Methods: We retrospectively reviewed 102 patients with isolated neonatal coarctation corrected surgically in our center between 1999 and 2019 with more than one year follow up and who maintained regular follow-up by our group. Cases of coarctation associated with any other significant heart disease were excluded. We collected data regarding presence of prenatal diagnosis, complicated pre-operative course (shock, need for ventilatory or inotropic support, multiorgan failure), prostaglandin infusion, age at surgery, post-operative complications, presence of acute renal injury, days at ICU, hospital stay, residual coarctation, persistent hypertension requiring medication at 1 and 6 months post-operative. Long term follow-up data included persistent hypertension, indexed left ventricular mass and need for reintervention were collected. A long-term negative composite outcome of persistent hypertension or Left Ventricular hypertrophy or need for reintervention was evaluated. Statistical analysis was performed with R v3.5.3. For binomial variables chi-squared tests were used, for continuous variables we used logistic regression tests.
Results: We identified 102 cases of simple neonatal coarctation. Of these 33 (32.3%) had prenatal diagnosis. In cases with prenatal diagnosis, there was a statistically significant lower incidence of complicated neonatal course (3.0% vs 30.4%; p < 0.01), and lower incidence of shock, multiorgan failure or need for ventilatory support (table). Age at surgery was significantly lower in the prenatal diagnosis group (5.1 days vs 14.9 days, p < 0.001). At mid- and long-term follow up, there were no significant differences between the groups with or without prenatal diagnosis, on rates of late reintervention, hypertension, or prevalence of LV hypertrophy (table), p = NS. Similar findings were seen for presence of neonatal complicated course, which did not influence the occurrence of any of the aforementioned late complications.
Conclusions: Despite playing a significant role in minimizing the severity of the neonatal presentation, prenatal diagnosis of coarctation or a less severe neonatal course did not influence mid- and long-term cardiovascular outcomes of neonates with coarctation.

Virtual Posters | Posters - G. Aortic Disease, Peripheral Vascular Disease, Stroke

PO 184. CLINICAL IMPACT OF TRANSOESOPHAGEAL ECHOCARDIOGRAPHY IN ACUTE BRAIN ISCHAEMIA: WHO SHOULD WE SELECT?

Joana Silva Ferreira, Marta Fonseca, Cátia Costa, José Maria Farinha, Ana Fátima Esteves, António Pinheiro Candjonjo, Rui Coelho, Isabel Silvestre, Rui Caria

Centro Hospitalar de Setúbal, EPE/Hospital de São Bernardo.

Introduction: Stroke is a prevalent disease and is still the leading cause of death in Portugal. Transoesophageal echocardiography (TOE) is a sensitive test often performed to detect embolic sources. However, since its most

Table PO 183
Effect of prenatal diagnosis on short-, mid- and long-term outcome of neonates with coarctation

		With prenatal diagnosis (%)	Without prenatal diagnosis (%)	p-value
Pre and early postoperative	Complicated neonatal course	1 (3,0%)	21 (30,4%)	0.004
	Shock	1 (3,0%)	21 (30,4%)	0.004
	Multiorgan failure	1 (3,0%)	14 (20,3%)	0.045
	Pre-operative ventilation	1 (3,0%)	14 (20,3%)	0.045
	PGE1 infusion	28 (84,8%)	46 (66,7%)	0.091
	Post-op AKI (KDIGO 2 or 3)	3 (9,1%)	5 (7,2%)	1
	Post-operative complications (≥3)	2 (6,1%)	9 (13,0%)	0.47
	Prolonged ICU stay (>3 days)	10 (30,3%)	32 (48,4%)	0.10
Mid-term follow-up	Late hypertension (at 6 months post-operative)	17 (53,1%)	42 (64,6%)	0.385
	Reintervention (<1y)	1 (3,0%)	1 (1,4%)	1
Long-term follow-up	Persistent late hypertension	8 (25,8%)	8 (13,3%)	0.234
	Need for reintervention (cumulative)	8 (24,2%)	17 (24,6%)	1
	LV hypertrophy	2 (6,0%)	5 (7,2%)	1

common findings such as patent foramen ovale (PFO) and atheroma plaques do not necessarily mandate a change in treatment, there is still debate over its clinical impact in the context of brain ischaemia (BI) and which patients (pts) should be submitted to it.
Objectives: To assess the clinical impact of TOE following BI and to identify clinical and diagnostic testing results that could help predict which pts benefit from it.
Methods: A retrospective study was conducted including all pts submitted to TOE in our hospital after acute BI in 2018 and 2019. Clinical and testing data (brain, vascular and cardiac imaging and 24h-Holter monitoring) was analysed and compared between 2 groups: the pts who had findings in TOE compatible with a source of embolism which resulted in a change in treatment ("relevant TOE" group) *vs* all other pts who had no such findings or whose findings did not result in change in treatment ("others"). Predictors of relevant TOE were also analysed.
Results: Of the 87 pts (mean age of 57 and maximum of 83) included in the study, 51 (59%) had findings compatible with a potential source of embolism in TOE, PFO being the most common (n = 42). In only half of them did these findings result in a change in treatment (the relevant TOE group: n = 25; 29% of the overall population). Age and other baseline characteristics did not significantly differ between groups. Pts with a relevant TOE presented more often with visual-field defects (32% vs 10%, p = 0.020) and were more likely to have visible acute lesions on brain imaging (96% vs 76%, p = 0.032) compared with the others. There was also a borderline significant association between the presence of infarct in the territory of the superior cerebellar artery and a relevant TOE (p = 0.054). On the contrary, the presence of significant lesions in extracranial arteries was negatively associated with a relevant TOE (p = 0.016). Considering the whole population, there were no transthoracic echocardiography (TTE) predictors of a relevant TOE but when analysing only younger patients (age < 50), the presence of any abnormality in TTE became associated with a relevant TOE (OR 8.5, CI 1.1-63.9; p = 0.044). We found no predictors of relevant TOE in 24h-Holter results.
Conclusions: TOE commonly identified potential sources of brain embolism, which proved relevant in half the cases. In the impossibility of submitting all BI patients to TOE, this study suggests that brain and vascular imaging rather than age or other baseline characteristics may be useful in predicting a relevant result. Moreover, TTE does not seem to be an adequate screening method to select patients for TOE, except possibly in younger patients. Studies with larger samples are needed to confirm these results.

PO 185. AORTIC VALVE INTERVENTION FOR AORTIC STENOSIS AND CARDIAC AMYLOIDOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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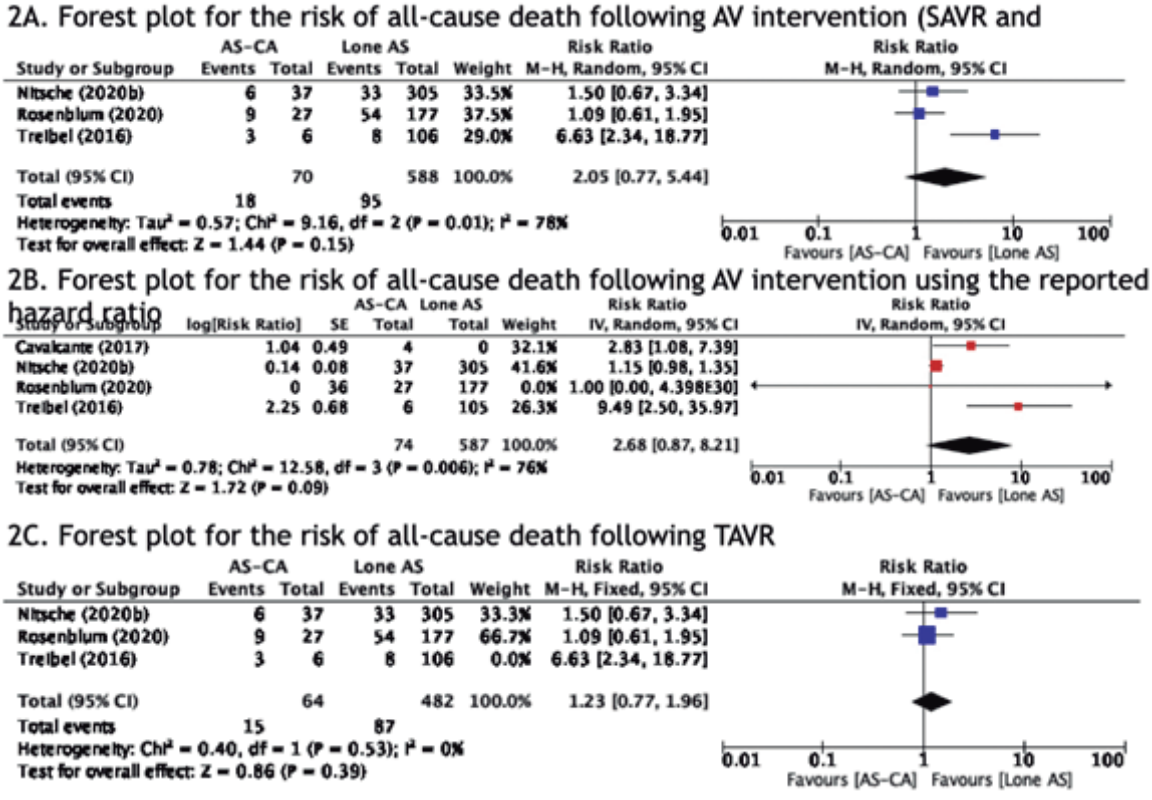
Centro Hospitalar e Universitário de Coimbra.

Introduction: Dual aortic stenosis (AS) and cardiac amyloidosis (CA) is a common presentation in the elderly. To support decision-making in aortic valve (AV) in CA-AS, we provide a comprehensive overview and a meta-analysis of outcomes after AV intervention.
Methods: A systematic review of studies reporting clinical outcome after AV intervention in patients with CA-AS was conducted. The primary endpoint was all-cause mortality after AV intervention. Secondary endpoints included heart failure (HF) admissions and peri procedural complications. Reported event rates and hazard risk were pooled.
Results: A total of four studies, encompassing 90 patients with CA-AS and 780 patients with lone AS were included for the present data meta-analysis. Eighteen deaths were reported during the follow-up. Weighted pooled analysis showed a non-significant higher risk of all-cause death in patients with CA-AS following either SAVR and/or TAVR (RR 2.68 95%CI 0.97 - 8.21, p = 0.09, I2 = 76%). Among an homogenous TAVR population, the estimated risk of death in CA-AS patients was comparable with the lone AS population (RR 1.23 95%CI 0.77 - 1.96, p = 0.39, I2 = 0%). Meta-analysis of HF hospitalizations and periprocedural complications was not possible because of the scarcity of data.
Conclusions: The evaluation of current observational evidence suggests that the estimated risk of death after AV intervention - in particular TAVR - in CA-AS patients is comparable with the lone AS population. An AV intervention procedure is possibly not futile in CA-AS and should not be denied.



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PO 186. COLCHICINE FOR CARDIOVASCULAR PREVENTION IN HIGH-RISK CARDIOVASCULAR PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Colchicine has emerged as an anti-inflammatory therapy for high-cardiovascular risk patients.
Objectives: To assess colchicine's efficacy and safety in high cardiovascular risk patients.
Methods: We systematically searched PubMed, Embase and Cochrane databases, in December 2020, for interventional studies comparing colchicine with placebo in high-risk cardiovascular patients. Main endpoints were stroke, myocardial infarction, urgent revascularization, cardiovascular and all-cause mortality, and gastrointestinal adverse events.
Results: Eleven randomized clinical trials were included, providing a total of 12275 patients, 82 pooled stroke events, 441 pooled myocardial infarction events and 402 urgent revascularization events. Meta-analysis showed a significantly lower stroke events for the colchicine compared with placebo group (pooled OR 0.49 [0.30, 0.78], p = 0.003, I^2 = 0%). Additionally, colchicine group presented a lower myocardial infarction rate (pooled OR 0.64 [0.43, 0.94], p = 0.02, I^2 = 56%) and urgent revascularization rate (pooled OR 0.57 [0.36, 0.91], p = 0.02, I^2 = 58%) despite the significant heterogeneity identified in both outcomes. Nevertheless, no significant differences were noted regarding cardiovascular and all -cause mortality as identified (pooled OR 0.79 [0.42, 1.46], p = 0.45, I^2 = 37%; pooled OR 1.04 [0.68, 1.61], p = 0.85, I^2 = 37%, respectively). In terms of safety, there was a significant higher rate of gastrointestinal adverse events (pooled OR 1.76 [1.27, 2.43], p = 0.006, I^2 = 66%).
Conclusions: According to our meta-analysis, colchicine use reduced cardio and cerebrovascular events in high-risk cardiovascular patients, although it had no impact on mortality.

PO 187. CARDIOVASCULAR RISK AND CORONARY ARTERY DISEASE BURDEN IN TAVI PATIENTS

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Introduction: Transcatheter aortic valve implantation (TAVI) is currently a therapeutic option for patients with severe aortic stenosis that are considered to be at high risk for surgical valvular intervention or for those over 75 years with intermediate risk. The majority of patients performs a coronary angiography (CA) prior to the procedure, in order to exclude significant coronary artery disease. We sought to characterize the cardiovascular risk profile and describe the epicardial coronary artery disease burden in patients that underwent CA.
Methods: Retrospective single center analysis of 517 consecutively included between 2009 and October 2020. Patients who underwent pre TAVR CA in the context of ACS or at other institution were excluded n = 138. The cardiovascular risk (CVR) profile was assessed according to the presence of *diabetes mellitus* (DM), obesity (defined as BMI> 30), hypertension, high blood cholesterol and tobacco smoking as was characterized any previous coronary artery intervention. The number of coronary lesions (defined as > 50%stenosis) in the CA was collected. The correlation between CVR profile and coronary lesions in the CA was analyzed.
Results: 517 patients were included - average age of 83.11 (± 6.3 years), 55% male. The average of cumulative CVR factors was 2.19 (± 1.04) and 22 patients presented no single risk factor. A total of 164 patients had previous history of percutaneous coronary artery intervention and 86 coronary artery bypass surgery (CABG) prior to the pre-TAVI CA (45 had both). The prevalence of angiographic disease was 28.2% in the remaining 312 patients. The correlation between risk factors and number of vessels with angiographically important lesions was weak (Table), although statistically significant (r2 = 0.251, p = 0.000).

Correlation between CVR factors and number of coronary lesions in the CA

		Nª Factores de risco	CATS Totais 2009-2020. Lesao Num Vasos
Nª Factores de risco	Correlação de Pearson	1	0,251*
	Sig. (bilateral)		0
	N	517	517
CATS totais 2009-2020. Lesao Num Vasos	Correlação de Pearson	0,251*	1
	Sig. (bilateral)	0	
	N	517	517

*A correlação é significativa no nível 0,01 (bilateral).

Conclusions: The correlation between CV risk factors and coronary lesions seems weak in TAVI patients. The majority of patients without previous PCI or CABG presents no significant coronary artery lesions.

PO 188. AORTIC STENOSIS: MUCH MORE THAN AN ISOLATED HEART DISEASE

Sofia S. Martinho[1], José Almeida[1], Cátia Ferreira[1], Valdirene Gonçalves[1], André Freitas[1], João André Ferreira[2], Gustavo Campos[1], João Rosa[1], Fátima Franco[1], Rogério Teixeira[1], Lino Gonçalves[1]

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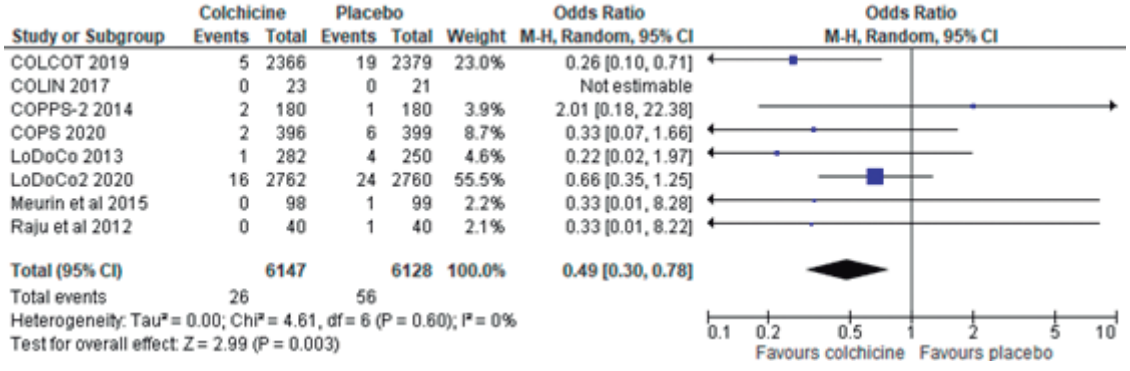

PO 186 Figure

Introduction: Aortic stenosis (AS) is more than only a degenerative disease; it could be also an atherosclerotic-like process involving the valve instead of the vessels. Little is known about the relation of arterial stiffness pre- and post-aortic valvular replacement. We aimed to assess the improvement of vascular component properties after aortic valve replacement in patients with severe aortic stenosis.
Methods: We conducted a retrospective, observational study of 50 patients with previous diagnosis of severe aortic stenosis, submitted to surgical or percutaneous valve replacement between 2011 and 2017. All underwent a comprehensive echocardiography, at baseline and 1-year after valvular replacement with evaluation of aortic strain, distensibility, stiffness index (β) and valvuloarterial impedance (Zva).
Results: Mean age was 79 ± 3 years and 58% were male. At baseline, 88% were on NYHA II and 12% in NYHA III-IV functional class; mean LVEF 61 ± 7%, mean transvalvular gradient 50 ± 12mmHg with a mean stroke volume indexed (SVi) of 49 ± 6 mL/m^2. Most of the patient were submitted to surgical replacement (n = 48). Functional class improved significantly, 1-year after valve replacement, most patients were in in NYHA I (76%), p < 0.001. Regarding echocardiography data, we found a significant decrease in the β stiffness and Zva indexes, from 8.8 ± 7.2 to 5.6 ± 4.1, -3.2 ± 8.1 (95%CI -5.7 to -0.6, p = 0.015) and from 4.2 ± 1.2 to 3.7 ± 0.8 mmHg/mL/m^2, -0.6 ± 1.7 mmHg/mL/m^2 (95%CI -1.1 to -0.1 mmHg/mL/m^2, p = 0.029), respectively. We also identified a numeric improvement in aortic strain and distensibility, but without statistical difference [2.1 ± 8.8% (95%CI -0.8 to 5%, p = 0.132) and (0.2 ± 4.2) ×10^{-3} mmHg^{-1} (95%CI (-0.2 to 1.6) ×10^{-3} mmHg^{-1}, p = 0.77), respectively].
Conclusions: According to our data, an aortic valve intervention also improved the vascular load of aortic stenosis patients.

PO 189. AORTIC ATHEROSCLEROTIC PLAQUES: THE ROLE OF ANTICOAGULATION

Ana Beatriz Garcia[1], Margarida Martins[2], Catarina Oliveira[2], Beatriz Silva[2], Pedro Alves da Silva[2], Joana Brito[2], Pedro Silvério António[2], Sara Couto Pereira[2], Nelson Cunha[2], Tiago Rodrigues[2], Cláudio David[2], Daniel Caldeira[2], Fausto J. Pinto[2], Ana Almeida[2]

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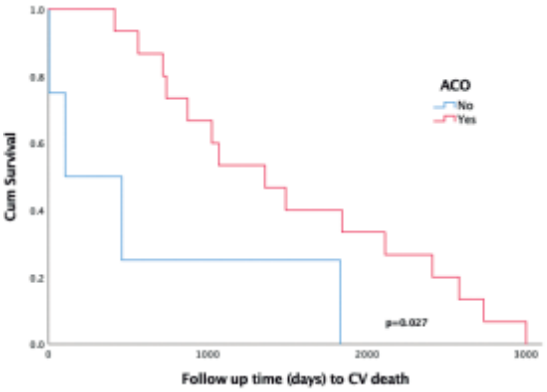
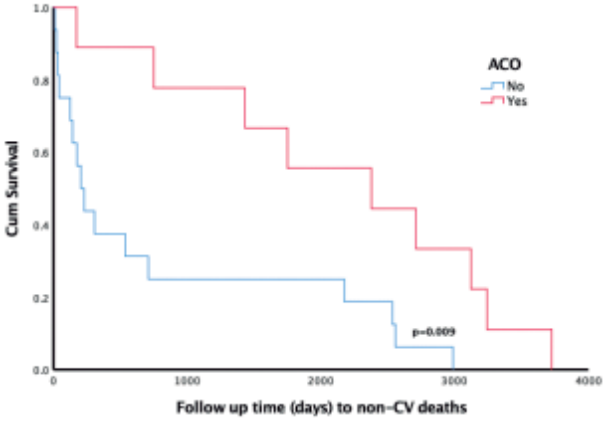
Introduction: Aortic atherosclerotic plaques (AAPs) are one of the major causes of spontaneous and iatrogenic stroke and peripheral emboli, carrying an high morbidity and mortality. Transesophageal echocardiography (TEE) plays a key rule on detecting AAP. The therapeutic approach of these patients (pts) is not well stablished.
Objectives: To evaluate the impact of anticoagulation (ACO) therapy on major events in asymptomatic pts with AAP detected in TEE.
Methods: Single-center retrospective study of consecutive patients submitted to TEE between 2010 and 2019 with documentation of AAP. Plaques were described as (1) complex (> 4 mm), (2) ulcerated and (3) mobile thrombi. The plaque location was also documented. We consulted pts data charts for clinical characterization and events recording during the follow up. Major events were defined as stroke, bleeding, hospital admissions (either cardiovascular (CV) and non-CV) and death. Statistical analysis was performed using Cox regression and chi-square tests.
Results: We enrolled 177 pts with a mean age of 70 ± 10.5 years, 63.8% males, 31.1% diabetic, 73.4% hypertensive, 54.2% with dyslipidemia, 62.7% obese, 25.4% with peripheral arterial disease, 25.9% with previous stroke and 55.4% with supraventricular arrhythmia. Most of pts had complex plaques (80.8%), mobile thrombi in 11.9% and ulcerated plaques in 7.3%; most of the plaques were located in proximal descending aorta (50.3%) and aortic cross (38.4%). Regarding baseline therapy, 52% were under ACO and 50.3% under statin. The main indication of ACO was atrial fibrillation (45.8%). During follow up (mean time: 1613 ± 1255 days), 61.5% pts died (10.7% from CV causes, 13% with unknown cause), 17.5% had a stroke, 5.7% had other embolic event (lower limbs emboli, unilateral amaurosis and ischemic colitis). Bleeding occurred in 18.3% pts; 47% pts were hospitalized (28.3% from CV cause). Adjusting for age and comorbidities, there were no significant differences between the group with and without ACO. ACO therapy prevented death from any cause, being also an **independent predictor** (p = 0.08, OR 0.489, IC 95% 0.288-0.831) when adjusted for comorbidities and age. ACO was associated with bleeding events (p = 0.003), but not with stroke or hospitalization from any cause (p = NS).





Conclusions: In this subset of pts, ACO therapy prevented death from any cause in pts with AAP. This may have therapeutic implications when approaching this pts, although larger studies to confirm this results are needed.

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PO 190. THE IMPACT OF ECHO-GUIDED VS FLUOROSCOPIC FEMORAL ACCESS PUNCTURE ON TRANSCATHETER AORTIC VALVE IMPLANTATION-RELATED VASCULAR COMPLICATIONS

Inês Rodrigues[1], Cláudio Guerreiro[2], Alberto Rodrigues[2], Bruno Melica[2], Lino Santos[2], Gustavo Pires de Morais[2], Pedro Braga[2], Francisco Sampaio[2]

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Introduction and objectives: Transcatheter aortic valve implantation (TAVI) is an increasingly used technique, but vascular and bleeding access-related

complications are still common in this procedure. The use of ultrasound guidance for femoral artery puncture can help reduce its occurrence. The objectives of this study were: 1) to evaluate the impact of echo-guided access site puncture on TAVI-related vascular and bleeding complications and 30-day mortality and (2) to identify the predictors of these outcomes.
Methods: Patients who underwent transfemoral TAVI between January and December 2017 (fluoroscopic-guided access) and between June 2018 and May 2019 (echo-guided access) were included in this study. Comparisons were made between both groups regarding vascular and bleeding complications, as defined by the VARC2 criteria, and 30-day mortality. Two additional composite endpoints were also defined: 1) any vascular or bleeding complications; and 2) any vascular or bleeding complications or the need for transfusion of at least two units of red blood cells (URBC).
Results: 230 patients were included (112 fluoroscopic-guided; 118 echo-guided access puncture). Haemorrhage (24.3% vs 9.4%, p = 0.003), vascular complications (27.7% vs 16.9%, p = 0.05) and 30-day mortality (13.9% vs 1.8%, p = 0.001) were more common with the fluoroscopic-assisted technique. After adjustment for clinical and procedural significant variables, the use of echo-guided access was an independent predictor of less haemorrhage (OR = 0.408, 95%CI 0.170-0.82, p = 0.045) and of the composite of any vascular or bleeding complication or the need for transfusion of ≥ 2 URBC (OR = 0.509, IC95% 0.264-0.979, p = 0.043). Regarding vascular complications as an isolated endpoint, only BMI was found as an independent predictor (OR 0.47, 95%CI 0.23-097, p = 0.04). A BMI value of 26.64 kg/m^2 was the best cut-off to predict vascular complications (S 78%, E 55%, AUC 0.666), offering greatest protection above this value (p < 0.001). Concerning 30-day mortality, access-site puncture method did not remain a predictor after adjusting for EuroSCORE II.
Conclusions: The introduction of echo-guided access-site puncture in TAVI procedures reduced TAVI-related vascular and bleeding complications and 30-day mortality, and it was an independent predictor of less haemorrhage and of the composite of any vascular or bleeding complication or the need for transfusion Interestingly, BMI proved to be the most important protective factor of vascular complications, possibly highlighting the obesity paradox associated with TAVI procedures.

PO 191. PERCUTANEOUS CORONARY INTERVENTION FOR TRUE BIFURCATION LESIONS: A SINGLE-CENTER EXPERIENCE

Mariana S. Brandão, Mariana Ribeiro Silva, Alberto Rodrigues, Cláudio Guerreiro, Pedro Ribeiro Queirós, Gualter Santos Silva, Diogo Santos Ferreira, Gustavo Pires-Morais, Bruno Melica, Lino Santos, Pedro Braga, Marco Oliveira, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: Percutaneous coronary intervention (PCI) for true coronary bifurcation lesions is challenging.
Objectives: To describe procedural and clinical outcomes of true bifurcation PCI.
Methods: Single-center retrospective study of consecutive patients (pts) submitted to PCI for true bifurcation lesions (06/2018-06/2020). MACE included death, myocardial infarction (MI), stroke, restenosis and reintervention.
Results: During the study period, 1678 PCI were performed, of which 7% were for true bifurcation lesions (Medina x,x,1). 118 pts (mean age 66.4 ± 11.0 yrs; 74.6% male; 32.2% diabetic; mean left ventricular ejection fraction 49.8 ± 8.4%) were included. Most pts (64.7%) were treated in the setting of an acute coronary syndrome (ACS): 26.7% ST-elevation MI, 31.9% non-ST elevation MI, 6.0% unstable angina. 35.3% were treated for a chronic coronary syndrome. 24.8% of pts presented with 3-vessel disease; 11.1% had a left main (LM) lesion. The most frequently diseased main branch was the left anterior descending artery: 21.2% (68), followed by the left circumflex: 17.8% (21), right coronary artery: 12.7% (15) and LM: 11.9% (14). In terms of bifurcation classification, lesions were mainly Medina 1.1,1 (71.2%), followed by 0.1,1 (13.6%); 1.0,1 (9.2%) and 0.0,1 (5.9%). PCI was mainly performed via radial artery (73.7%). Mean number of stents: 1.4 ± 0.6. Lesions were predominantly treated with single stenting technique (80.3%), regardless the culprit segment. Double-stenting was used in 23 (19.7%) pts: TAP was the most used technique (10), followed by culotte (3), crush (2), DK-crush (2) and T-stent (1). Proximal optimization technique and kissing balloon inflation were performed in 38.1% and 44.9% of pts, respectively. Rotational atherectomy was used in 10.4%. Ventricular support devices were used in 3 pts (1 Impella, 2 intra-aortic balloon pump). Intracoronary imaging was used in 13 pts: intravascular ultrasound and optical coherence tomography (OCT) in 8 and 5 pts, respectively; its use was more frequent in cases of LM PCI (p = 0.002). OCT was associated with higher contrast doses (350 *vs* 224 ml, p < 0.001), with no increase in acute kidney injury incidence (p = 0.413). Fluoroscopic time (p = 0.684) and radiation dose (p = 0.916) did not differ. Side branch occlusion occurred in 5 pts and iatrogenic coronary dissection in 7 pts. At a mean follow-up time of 17.3 ± 8.1 months, MACE and mortality rates were 13.3% and 6.9%. MACE occurred more frequently in pts with LM lesion (p < 0.001) and less often in cases where complete revascularization was achieved (p = 0.006).
Conclusions: True bifurcations represented a relatively small percentage of treated lesions. Bifurcation PCI was mainly performed in ACS setting. In line with literature, single stenting was the most used technique. MACE rate was globally low and was decreased by complete revascularization. Still, LM bifurcation PCI was associated with increased MACE.

PO 192. RIGHT VENTRICULAR FUNCTION PARAMETERS AS THE BEST ACUTE CELLULAR REJECTION PREDICTORS

Sofia Jacinto, António Valentim Gonçalves, Tiago Pereira-da-Silva, Rui Soares, Rita Ilhão Moreira, Lídia de Sousa, Bárbara Teixeira, Rita Teixeira, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Since the mid-1970s, the diagnosis of acute cellular rejection (ACR) has been made by endomyocardial biopsy (EMB). Whether B-Type Natriuretic Peptide (BNP), transthoracic echocardiography (TTE) parameters and right heart catheterization (RHC) parameters can detect rejection in heart transplant (HT) patients have yielded conflicting results and did not overcome the use of EMB in the first year after HT.
Objectives: The aim of this study was to evaluate whether BNP, TTE and RHC parameters can be used to detect ACR in the first year after HT.
Methods: Prospective study of consecutive EMB performed in the first year after HT. Plasma BNP levels, TTE and RHC were performed at the same day. Clinical significant ACR was defined as ≥ 2R, according to the ISHLT 2004 grading. The area under the curve (AUC) was analysed for statistically significant associations to detect ACR.
Results: From 2017 to 2018, 50 EMB were performed with the following results: 2R - 5 (10.0%); 1R- 29 (58.0%); 0-16 (32%). Mean age was 48.7 ± 8.3 years, with mean BNP value of 964 ± 1115 pg/ml. AUC results of BNP and several TTE and RHC parameters for the prediction of ACR are represented in the table 1. Right atrial pressure (RAP) value (p = 0.027) and Pulmonary artery pulsatility index (PAPi) were the only significant predictors of ACR. RAP > 10 mmHg had a sensitivity of 60% and a specificity of 84%, while PAPi < 2 had a sensitivity of 60% and a specificity of 86% for detecting ACR.
Conclusions: Detecting ACR without EMB remains a clinical challenge, but right ventricular parameters seem the best since both RAP and PAPi measured by RHC were a significant predictor of ACR in the first year after HT, while BNP and other RHC values did not correlate with ACR.

PO 193. DISTAL LEFT MAIN PERCUTANEOUS CORONARY INTERVENTION: DOES THE CLINICAL SCENARIO CHANGE THE OUTCOME?

Carolina Saleiro[1], Joana m Ribeiro[2], João Lopes[1], Diana de Campos[1], José P. Sousa[1], Joana Silva[1], Luís Paiva[1], Hilário Oliveira[3], Marco Costa[1], Lino Gonçalves[1]

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[2]Centro Hospitalar de Entre Douro e Vouga, EPE/Hospital de S. Sebastião.
[3]Centro Hospitalar e Universitário de Coimbra.

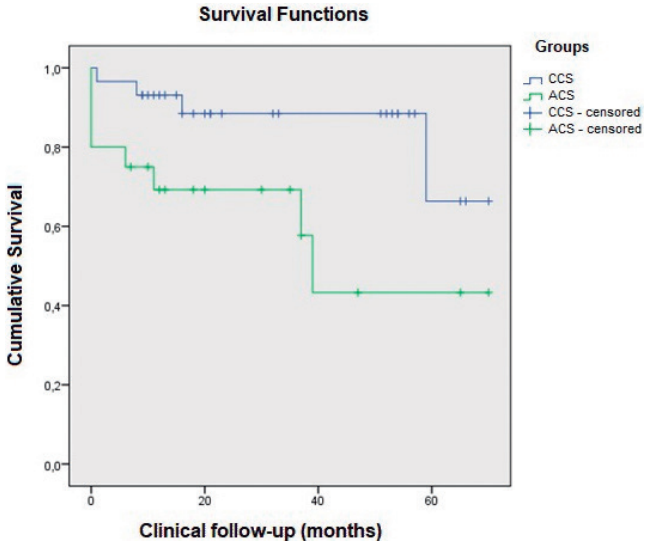
Introduction: Left main (LM) coronary artery stenosis is a known predictor of morbi/mortality. Coronary artery bypass grafting is the treatment of

Table **Acute cellular rejection prediction**

PARAMETERS	AUC	p	95% CI
BNP	0.658	0.251	0.405-0.911
Troponin I	0.591	0.507	0.260-0.923
Left ventricular ejection fraction	0.416	0.541	0.218-0.614
E/A	0.480	0.895	0.282-0.678
Deceleration time	0.463	0.463	0.161-0.765
Isovolumic relaxion time	0.745	0.076	0.427-1.000
Cardiac index	0.595	0.488	0.346-0.845
Pulmonary capillary wedge pressure	0.628	0.401	0.329-0.926
Mean pulmonary artery pressure	0.684	0.181	0.511-0.857
Right atrial pressure	0.804	0.027	0.631-0.978
Pulmonary capillary wedge pressure/Right atrial pressure	0.733	0.126	0.539-0.927
Pulmonary artery pulsatility index	0.791	0.035	0.606-0.976

PO 192 Figure

choice for most patients with distal LM stenosis, but percutaneous coronary intervention (PCI) is a valid alternative in selected cases.
Objectives: To compare the outcomes of patients undergoing distal LM PCI, according to the clinical presentation: chronic (CCS) vs acute coronary syndrome (ACS).



Methods: 50 consecutive LM PCIs at a single centre between 2010-2017 were included and divided into Group A (CCS – N = 30) and Group B (ACS, N = 20). Clinical, procedural and follow-up data were recorded. The study endpoints were procedural complications, all-cause mortality and coronary artery disease (CAD) progression. Median follow-up time was 20 (11-52) months.
Results: The mean age of 69 ± 10 years and there was a male predominance (74%). Baseline characteristics were balanced between groups. There was a high prevalence of cardiovascular risk factors (dyslipidaemia - 86%, hypertension - 86%; diabetes - 54% and smoking - 35%). In Group B, 25% presented with STEMI. 3- vessel disease was frequent (48%), and the mean Syntax score was 28 ± 10. The preferred technique was provisional stenting (72%) and intracoronary imaging was performed in 26% (8% OCT, 18% IVUS). Drug eluting stents were used in 86%. TIMI 3 flow was achieved in 96% of the cases. All the procedural details were similar in both groups. Radiation dosage was higher in group B (p = 0.029), but fluoroscopy time and contrast dosages were comparable. Periprocedural complications were similar in both groups: dissection in 7%, cardiac arrest in 2%. CAD progression was comparable between groups. 15% of the patients had coronary artery disease progression, with 7% presenting with LM stent restenosis; 11% had an ACS during follow-up; but there were no stent thrombosis. 2 patients died during hospital stay and 10 during follow-up. Kaplan-Meyer curves showed a decreased survival among patients in group B (61 vs 41, log rank p = 0.024 – Figure). After adjustment for the bifurcation technique (provisional vs 2-stent), only age (HR 1.09, 95%CI 1.00-1.19) and clinical context remained predictors of outcome (HR 4.91, 95%CI 1.31-18.26).
Conclusions: Distal LM PCI performed in the context of an ACS did not result in an increase in procedural complications or non-fatal ischaemic events, as compared to patients treated for CCS, but was associated with an increased long-term mortality.

PO 194. BIFURCATION LESIONS AND STENT DIAMETER: IS IT THE BIGGER THE BEST?

Carolina Saleiro[1], Joana M. Ribeiro[2], Diana de Campos[1], João Lopes[1], José P. Sousa[1], Ana R. M. Gomes[1], Joana Silva[1], Luís Paiva[1], Hilário Oliveira[3], Marco Costa[1], Lino Gonçalves[1]

[1]*Centro Hospitalar e Universitário de Coimbra, EPE/Hospital Geral.*
[2]*Centro Hospitalar de Entre Douro e Vouga, EPE/Hospital de S. Sebastião.*
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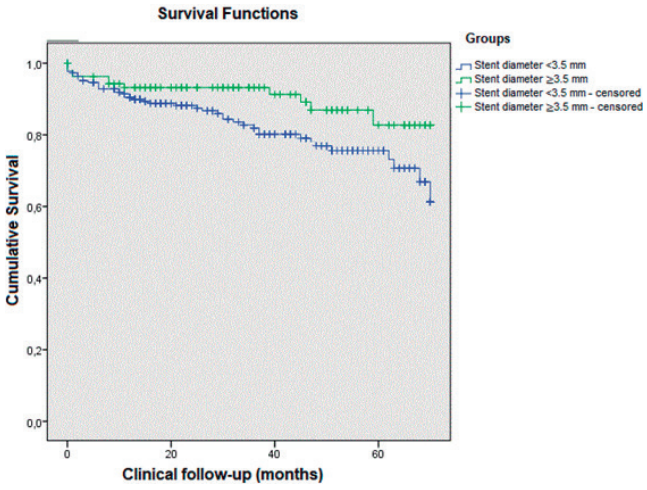
Introduction: Vessel size is a determinant of long-term outcomes after coronary stenting: smaller target vessel diameter has been reported as a predictor of adverse outcomes. There is a scarcity of information about the specific role of stent diameter in complex lesions such as bifurcations.
Objectives: To compare the characteristics and outcomes of bifurcation lesions according to main vessel (MV) stent diameter.
Methods: 402 consecutive bifurcation PCIs (360 patients) at a single centre between 2010-2017 were included. Clinical and procedural data and events during follow-up were evaluated. Two groups were created based on MV stent diameter: Group A – stent diameter < 3.5 mm (N = 276) and Group B – stent diameter ≥ 3.5 mm (N = 126). The primary co-endpoints were periprocedural complications and all-cause long-term mortality. Median follow-up time was 31 (14-53) months.
Results: 75% of the procedures were performed in male patients, with a mean age of 69 ± 10 years old. Comorbidity with dyslipidaemia (73%), arterial hypertension (73%); diabetes (38%) and tobacco usage (24%) were

frequent. Patients in group B were younger (70 ± 11 vs 66 ± 10 years old, p = 0.026) and were more frequently smokers (24% vs 36%, p = 0.021); other baseline characteristics were balanced between groups. The indication for revascularization was chronic coronary syndrome in 62% of the cases and the main vessel was left anterior descendent in 51%; left circumflex in 23%; left main in 12%; right coronary artery in 3%. The preferred technique was provisional stenting (67%; no difference between groups), and most of patients received only one stent (65%). Drug eluting stents were used in 85% and the mean length of treated vessel was 23 ± 11 mm. TIMI 3 flow after procedure was achieved in 98%. Intracoronary imaging was mostly performed in the group treated with larger stents (5% vs 18%, p < 0.0001). Fluoroscopy time, radiation and contrast dosages were similar between groups. Periprocedural myocardial infarction occurred in 32% of the cases; dissection in 7%, intraprocedural stent thrombosis and no-reflow in < 1%; there was no difference in complications between groups. 56 patients died during follow-up. Kaplan-Meyer curves showed an increased survival among patients treated with larger stents (58 vs 63, log rank p = 0.04 - Figure). After adjustment for the bifurcation technique performed (provisional vs no provisional), the use of stent ≥ 3.5mm still showed a tendency to halve mortality - (HR 0.52, 95%CI 0.28-1.003, p = 0.053).



Conclusions: In our cohort, stent diameter did not predict periprocedural complications. However, patients with a larger MV diameter had an increased long-term survival.

PO 195. URGENT VS NON-URGENT TRANSCATHETER AORTIC VALVE IMPLANTATION OUTCOMES

Alexandra Castelo, André Grazina, Tiago Mendonça, Inês Rodrigues, Pedro Garcia Brás, Vera Vaz Ferreira, Rúben Ramos, António Fiarresga, Duarte Cacela, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: There are limited data about the outcomes of non-elective transcatheter aortic valve implantation (TAVI), but some studies suggest that these patients have worst results.
Objectives: To compare outcomes in patients submitted to urgent versus elective TAVI.
Methods: Retrospective analysis of consecutive patients (P) submitted to TAVI between 2018 and 2020 in a tertiary center. Baseline characteristics and outcomes after the procedure were collected. Urgent TAVI was considered when patients were not electively admitted for the procedure but required the intervention on the current admission for medical reasons and could not be sent home without a definitive procedure.
Results: A total of 208P (55.3% female) were included, with a mean age of 82 ± 7years. Patients submitted to urgent TAVI (57P, 27.4%) had worse baseline characteristics, with higher EuroScore risk (10.7% vs 5.4%, p < 0.001), STS score (7.3% vs 4.4%, p < 0.001), and natriuretic peptide B (1,350 vs 728 pg/mL, p = 0.021), lower left ventricle ejection fraction (44% vs 50%, p < 0.001), more diabetes (49.1% vs 33.1%, p = 0.033), peripheral artery disease (22.8% vs 4.6%, p < 0.001) and worse accesses. (21.2% vs 5%, p = 0.002). In univariable analysis, urgent TAVI was associated with higher intra-hospital mortality (14% vs 4%, p = 0.01), 30-days mortality (17.5% vs 4%, p = 0.001) and 30-days cardiovascular mortality (17.5% vs 3.3%, p < 0.001), life-threatening bleeding (17.9% vs 4%, p = 0.001), acute kidney injury (16.1% vs 4.7%, p = 0.007), vascular complications (16.1 vs 4%, p = 0.003) and longer hospital and intensive care unit stay (30 vs 12 days, p < 0.001 and 6 vs 4 days, p = 0.025 respectively), but not with post-TAVI hospital stay (12 vs 10 days, p = 0.37). When adjusted to the differences in baseline characteristics, in a multivariable analysis, urgent TAVI was only associated with longer hospital stay (p < 0.0001). There were no differences in outcomes between groups beyond the first 30 days after the procedure, including mortality and hospital admissions.

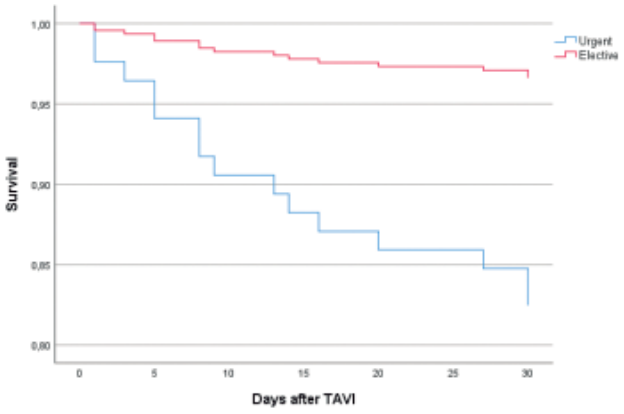


Fig. 1 – 30-days survival after urgent vs elective TAVI

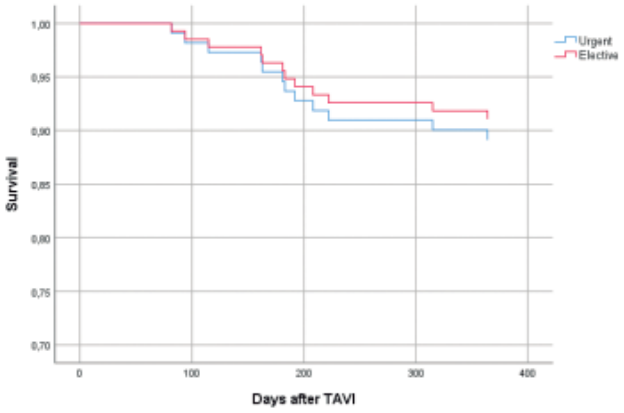


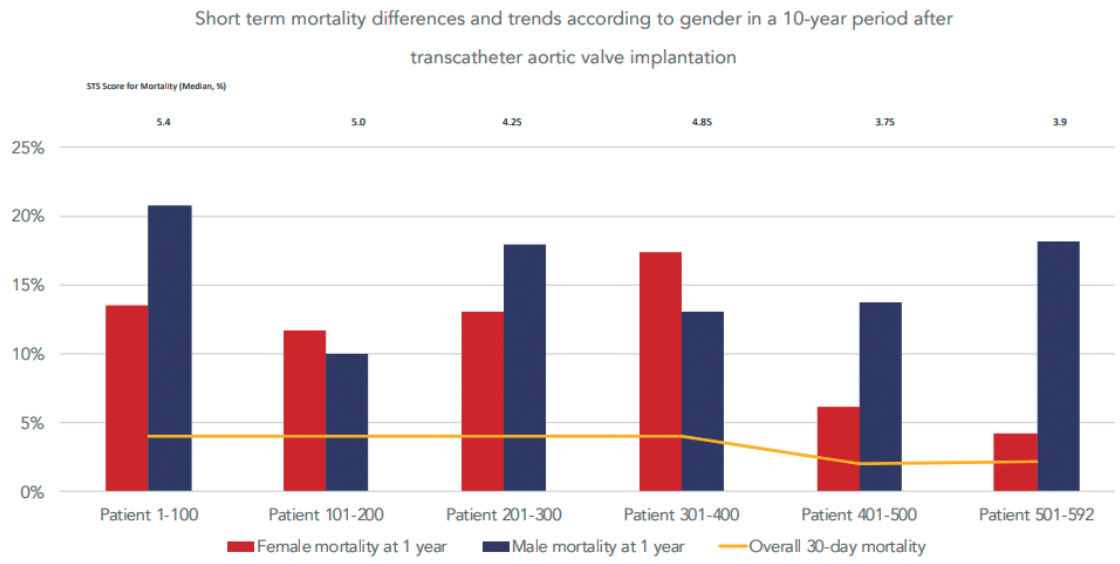
Fig. 2 – One year survival after urgent vs elective TAVI

Conclusions: Patients submitted to urgent TAVI tend to have worse short-term outcomes, but this seems to be attributable to the worse baseline characteristics of these cases instead of the urgent nature of the procedure. Even with the adjustment for baseline differences, these patients have longer global hospital stays, but they don't have latter pos-TAVI discharge.

PO 196. GENDER DIFFERENCES AND MORTALITY TRENDS AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION: A 10-YEAR ANALYSIS FROM A SINGLE TERTIARY CENTRE

Cláudia Jesus Silva, Mariana Gonçalves, Rui Campante Teles, Pedro de Araújo Gonçalves, Manuel de Sousa Almeida, Afonso Félix Oliveira, João Brito, Luís Raposo, Henrique Mesquita Gabriel, Tiago Nolasco, José Neves, Miguel Mendes

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.



PO 196 Figure

Objectives: To evaluate gender differences and mortality trends in a population undergoing transcatheter aortic valve implantation (TAVI); to analyze the correlates to all-cause mortality at follow up.
Methods: Prospective cohort of 592 TAVI patients (53.4% being female) treated between 2008 and 2018. Mortality differences between genders at different timepoints were assessed according to log rank test. Predictors of all-cause mortality at follow up were identified using a univariate model and were then analyzed through multivariate Cox proportional hazard models.
Results: Unlike females, male patients were younger (81 ± 7.5 vs 84.3 ± 5.3) and presented more comorbidities. Twelve female and eight male (3.5%) patients died in the first 30 days after TAVI. Despite a higher STS score in women, all-cause mortality rates at 30 days and at 1 year were comparable. At long term follow up, female patients demonstrated better survival rates, even despite a higher number of periprocedural complications. Correlates identified in men were the presence of diabetes and previous history of CABG, NYHA class III/IV, PASP and non-transfemoral access. None of these variables remained significant in the multivariable analysis. In female only peripheral artery disease was associated with mortality. Shock and need for renal replacement were predictors of mortality in both genders, as it was heart failure re-admission after discharge. STS also showed to correlate to long term mortality in both genders.
Conclusions: Despite a higher STS score in women, 30-day mortality was not significantly different from male, while at long term follow-up, women present better clinical outcomes.

PO 197. FEASIBILITY OF CORONARY ANGIOGRAPHY AFTER TAVR

Gualter Santos Silva, Cláudio Espada Guerreiro, Pedro Gonçalves Teixeira, Pedro Ribeiro Queirós, Mariana Ribeiro da Silva, Mariana Brandão, Diogo Ferreira, Gustavo Pires-Morais, Lino Santos, Bruno Melica, Alberto Rodrigues, José Pedro Braga, Ricardo Fontes-Carvalho

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Introduction: The prevalence of coronary artery disease (CAD) is high among patients with severe aortic stenosis who undergo transcatheter aortic valve replacement (TAVR). Indications for TAVR are now expanding to younger and lower risk patients. During their lifetime, these patients will be at risk of developing CAD and it is expected an increase in coronary angiography and percutaneous coronary intervention (PCI). Aortic prosthesis, particularly if in supra-annular position, may pose important technical difficulties in coronary re-engagement after TAVR.
Objectives: To evaluate the feasibility to reengage the coronary ostia after TAVR, describe complications and compare technical differences between coronary procedures performed before and after TAVR.
Methods: Retrospective analysis of 714 patients submitted to TAVR from August 2007 to December 2019. Patients who needed coronary angiography after TAVR were selected. The primary endpoint was the rate of successful coronary ostia cannulation after TAVR, defined by the possibility to selectively cannulate and inject both coronary ostia. Secondary endpoint was complications associated with coronary catheterization after TAR.
Results: Among 714 patients, a total of 25 (3.5%) patients were submitted to coronary angiography after TAVR. 14 patients were male (56%), mean age 78.2 ± 6.2 years and 9 (36%) had history of previous coronary revascularization. From the 25 coronary angiographies (balloon-expandable Edwards-Sapien n = 11, 44%; self-expandable CoreValve n = 10, 40%; Portico n = 2, 8%; Symetis n = 2, 8%), 24 met the primary endpoint and only one was semiselective (in a patient with a Symetis). Among these, 12 (48%) had also indication for PCI and all were successfully performed (Edwards-Sapien n = 3, 25%; CoreValve n = 6, 50%; Portico n = 2, 17%; Symetis n = 1, 8%). The main indications for coronary angiography was chronic coronary syndrome (n = 8, 32%) and acute coronary syndrome without ST segment elevation (n = 7, 28%). Coronary arteries treated in this context were: left main 16.7% (n = 2), anterior descending artery 33.3% (n = 4), circumflex artery 41.7% (n = 5) and right coronary artery 25.0% (n = 3). There were no complications reported during or post-procedure. Comparing coronary angiographies before and after TAVR, there were no significant differences regarding arterial access site, catheter diameter, fluoroscopy time and quantity of contrast used in coronary angiography.
Conclusions: Although the need for coronary angiography was rare in patients after TAVR, selective diagnostic coronary angiographies were possible in 96% (24/25) and PCI was feasible in all patients in whom it was indicated, without any reported complications. Further prospective studies are needed to confirm the great feasibility of performing coronary angiography after TAVR.

PO 198. PROGNOSTIC IMPACT OF THE PRESENCE AND MANAGEMENT OF CORONARY ARTERY DISEASE IN PATIENTS UNDERGOING TAVI

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Introduction: Approximately half of transcatheter aortic valve implantation (TAVI) candidates have coronary artery disease (CAD). Controversial results have been reported regarding the effect of the presence/severity of CAD and its management on clinical outcomes post-TAVI.
Objectives: To describe the presence, extension, severity and management of CAD pre-TAVI and to evaluate its impact on 2-year mortality in a real world all comers population.
Methods: Single centre retrospective analysis from a prospectively collected institutional registry (VCROSS) including 517 patients that underwent TAVI for severe aortic stenosis between January 2009 and December 2018. Patients who underwent pre TAVI CA in the context of ACS or at other institution were excluded n = 138. Ultimately 380 entered the analysis. Obstructive CAD was defined as stenosis > 50% in major epicardial vessels (> 2.5 mm). The total number of major epicardial with obstructive CAD was reported as was assessed the number of those left untreated. Univariate analysis was performed to assess 1) differences between patients with or without CAD and between those with significant CAD who have or have not undergone PCI, 2) variables associated with 2-year mortality. Binary logistic regression was performed to identify independent predictors of 2-year mortality including the presence of significant CAD and the type of management.
Results: A total of 380 patients were included, 55.3% male with an average age of 83yo (± 6.3), mean Euroscore II of 4.35. 76 had previous coronary artery bypass grafting (CABG) and 136 had previous PCI (43 had both). 55 patients (14.4%) presented with normal coronary arteries, 120 (31.6%) with non-obstructive CAD and 205 (54%) with obstructive CAD. Out of the latter, 112 (29.5%) underwent PCI. Statistically significant differences were found between obstructive CAD vs non-obstructive patients in terms of age, previous history of ICP and CABG. In the subgroup population with obstructive CAD, no statistically significant differences was found in the PCI vs non PCI group, apart from previous history of ICP and CABG. Diabetes mellitus, previous history of percutaneous coronary intervention (PCI) and reduced ejection fraction (rEF- defined has < 50% echocardiographically) had a negative prognostic impact in the 2 year mortality of the 380 patients. 2-year mortality was 14.5% (55 patients). The presence and management of CAD pre TAVI had no impact in 2-year mortality, when accounting for the differences in previous ICP history, CABG, age, and rEF.

Individual variables and 2 year mortality

			Escore	gl	Sig.
Passo 0	Variáveis	Idade	0.362	1	0.547
		SexoVal	2.915	1	0.088
		IMC	0.459	1	0.498
		FR DMVal	6.811	1	0.009
		FR DislipidemiaVal	0.825	1	0.364
		FR HTAVal	2.412	1	0.120
		FR Tabagismo Val	0.901	1	0.342
		Hx CABGVal 1/0	0.092	1	0.761
		Hx ICPVal	9.275	1	0.002
		FEJ deprimida 0/1(N/S)	8.174	1	0.004
	Estatísticas globais		30,814	10	0.001

PCI vs non PCI in Obstructive CAD population- Binary regression with CVRF

		B	E.P.	Wald	gl	Sig.	Exp(B)
Passo 1a	Idade	0.040	0.034	1.436	1	0.231	1.041
	SexoVal	-0.569	0.465	1.496	1	0.221	0.566
	IMC	0.014	0.029	0.233	1	0.629	1.014
	FR DMVal	-0.230	0.451	0.259	1	0.611	0.795
	FR DislipidemiaVal	0.476	0.497	0.918	1	0.338	1.610
	FR HTAVal	-0.964	0.598	2.605	1	0.107	0.381
	FR Tabagismo Val	-0.224	0.257	0.756	1	0.385	0.800
	Hx ICPVal	3.680	0.505	53.152	1	0.000	39.635
	Hx CABGVal 1/0	-2.037	0.503	16.382	1	0.000	0.130
	FEJ deprimida 0/1(N/S)	-0.455	0.465	0.958	1	0.328	0.635
	Constante	-3.285	3.180	1.067	1	0.302	0.037

a. Variável(is) inserida(s) no passo 1: Idade, SexoVal, IMC, FR DMVal, FR DislipidemiaVal, FR HTAVal, FR Tabagismo Val, Hx ICPVal, Hx CABGVal 1/0, FEJ deprimida 0/1(N/S).

Diferences between obstrctive vs non-obstructive CAD population

		B	E.P.	Wald	gl	Sig.	Exp(B)
Passo 1a	Idade	0.013	0.026	0.247	1	0.619	1.013
	SexoVal	-0.828	0.323	6.585	1	0.010	0.437
	IMC	0.009	0.015	0.322	1	0.571	1.009
	FR DMVal	-0.318	0.333	0.911	1	0.340	0.728
	FR DislipidemiaVal	-0.227	0.309	0.543	1	0.461	0.797
	FR HTAVal	-0.451	0.385	1.376	1	0.241	0.637
	FR Tabagismo Val	-0.141	0.209	0.456	1	0.500	0.868
	Hx CABGVal 1/0	3.678	0.664	30.660	1	0.000	39.556
	Hx ICPVal	3.108	0.364	72.769	1	0.000	22.384
	FEJ deprimida 0/1(N/S)	-0.134	0.328	0.166	1	0.684	0.875
	Constante	-0.429	2.353	0.033	1	0.855	0.651

a. Variável(is) inserida(s) no passo 1: Idade, SexoVal, IMC, FR DMVal, FR DislipidemiaVal, FR HTAVal, FR Tabagismo Val, Hx CABGVal 1/0, Hx ICPVal, FEJ deprimida 0/1(N/S).

Table 4 PO 198
2-year mortality – variables that influence outcome + variables showing population differences + number of diseased coronary arteries and those left untreated

		B	E.P.	Wald	gl	Sig.	Exp(B)
Passo 1a	Hx CABGVal 1/0	-0.714	0.538	1.765	1	0.184	0.490
	Hx ICPVal	0.892	0.363	6.018	1	0.014	2.439
	Vasos por tratar	0.141	0.249	0.321	1	0.571	1.152
	CATS TOTAIS 2009-2020. NumeroLesoes	0.010	0.141	0.005	1	0.943	1.010
	SexoVal	-0.476	0.319	2.226	1	0.136	0.621
	Idade	0.024	0.026	0.813	1	0.367	1.024
	FEJ deprimida 0/1(N/S)	0.753	0.314	5.756	1	0.016	2.123
	Constante	-3.698	2.277	2.638	1	0.104	0.025

a. Variável(is) inserida(s) no passo 1: Hx CABGVal 1/0, Hx ICPVal, Vasos por tratar, CATS TOTAIS 2009-2020. NumeroLesoes, SexoVal, Idade, FEJ deprimida 0/1(N/S).

Conclusions: The presence and type of management of obstructive CAD in this real world all comers registry did not impact the prognosis at 2 years.

PO 199. DECISION FAILURE IN AMBIGUOUS LESIONS ASSESSED BY CORONARY PHYSIOLOGY EVALUATION

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Introduction: The potential benefit of revascularization depends on presence and extension of myocardial ischemia.Important complications can derive from revascularization, so evidence of benefit is crucial to justify the risk of the procedure. Coronary physiology has a significant role on this evaluation, especially for intermediate lesions.
Objectives: The aim of this study is to determine the prevalence and impact of treatment decision failure of ambiguous lesions assessed by coronary physiology evaluation (PE).
Methods: Retrospective study, including all consecutive patients who performed PE in our center between December 2013 and December 2018, with clinical follow-up. The primary endpoint of this follow-up was a composite called Decision Failure (DF), and was defined as clinically-driven target lesion (TL) revascularization, and TL-related Acute Coronary Syndrome. TL was defined as the treated segment, when treated (due to positive PE), or the evaluated segment, when deferred (negative PE). Additionally, Myocardial Infarction (MI), Unstable Angina (UA) and all-cause mortality were sought after.
Results: A total of 256 lesions in 182 patients were analyzed with a mean follow-up of 26 ± 12 months. Male patients accounted for 57%, with a mean age of 67 ± 10years old. Hypertensive patients accounted for 63%, 41% had diabetes and 32% had history smoking habits. The main reason for performing coronariography was due to treadmill stress test (39%) or imaging techniques (19%). In 11% of the patients, non-culprit PE was done in a NSTEMI context. In 7 cases, PE was attempted, but not achieved, due to technical problems. Different techniques were executed: iFR (69%), contrast hyperemia (38%) and FFR (40%). PE lead to revascularization of 63 and deferral of 193 lesions. In 6 cases, PE was borderline negative, but the decision was to perform revascularization, due to anatomical evaluation with IVUS. Only one (0.4%) possible complication was observed: dissection possibly due to physiology guide- wire progression, which was resolved with a stent implantation. DF was observed in 4% of patients, being TL failure present in 3%: 1 presenting with STEMI, 2 with NSTEMI and 2 UA, with a mean of 7 ± 3 months after PE. All of the events were observed after deferred intervention due to negative PE. Globally, UA was found in 5% (n = 10) and MI in 4% (n = 8) of patients after a median follow-up of 12 [4;15] and 20 [9;43] months, respectively. Mortality during follow-up occurred in 7% (n = 12) of patients, only one possibly related with TL failure (3 years after negative evaluation).
Conclusions: Revascularization based on PE has been proved to be useful (decision on 256 lesions otherwise ambiguous), safe (0.4% complications)and efficient (DF 4%) technique.

PO 200. CORONARY ARTERY BYPASS GRAFTING SURGERY IN PATIENTS ON PRE-OPERATIVE RENAL REPLACEMENT THERAPY: SAFETY AND LONG-TERM SURVIVAL

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Introduction: Despite the high risk for severe coronary artery disease, it remains controversial if patients in renal replacement therapy (RRT) can safely undergo coronary artery bypass grafting surgery (CABG).
Objectives: To clinically characterize patients on pre-operative RRT who underwent CABG and their post-operative outcomes, namely immediate and long-term survival.
Methods: Retrospective single-centre study including patients on pre-operative RRT who required isolated CABG from 2004 to 2013. RRT was defined as either haemodialysis or peritoneal dialysis. Frequencies and proportions were obtained. Pre-operative data, postoperative complications, early and long-term survival were summarised. Maximum follow-up time was 15 years, median 9 years.
Results: We included 35 patients, mean age 62 ± 11 years, 86% being male. Most patients (n = 29, 88%) were on haemodialysis and presented frequently diabetes (63%), arterial hypertension (97%) and dyslipidaemia (60%). The pre-operative mean creatinine clearance (CrCl) was 29 ± 32 mL/min and most patients were under beta-blocker (71%), statins (77%) and nitrates (64%). Twenty-one (68%) patients presented CCS class IV, most of them with mild left ventricular dysfunction (n = 24, 71%). Fifteen patients (43%) had a recent acute myocardial infarction, 25 (71%) presented with 3-vessel disease and 19 (54%) as urgent surgery. On-pump CABG was used in 54% and 40% received a multiple arterial grafting approach. Post-operatively, 2 patients (6%) required inotropic support, 4 (13%) prolonged mechanical ventilation (> 24h), 15 (43%) presented *de novo* atrial fibrillation and 1 (3%) had a stroke. These patients required a hospital stay of 14 ± 11 days. Four patients required re-exploration of thorax: 2 due to bleeding and 2 due to sternal dehiscence. Regarding mortality, 2 patients (6%) died in the hospital or within the first 30 days after surgery and 25 patients deceased during the assessed follow-up. The 1-, 3-, 5- and 10-years cumulative survival were 89%, 69%, 51% and 32%, respectively.
Conclusions: Patients with terminal kidney disease requiring RRT who need to undergo CABG should go through a comprehensive clinical evaluation before surgery. Our results are in line with previous series; however, further studies are needed to confirm if CABG surgery provides a significant survival improvement in this subset of patients.

PO 201. SINGLE STENTING VERSUS DOUBLE STENTING TECHNIQUE IN TRUE BIFURCATION CORONARY LESIONS

Mariana Ribeiro Silva, Mariana Brandão, Alberto Rodrigues, Cláudio Guerreiro, Pedro Ribeiro Queirós, Gualter Santos Silva, Diogo Santos Ferreira, Gustavo Pires-Morais, Bruno Melica, Lino Santos, Pedro Braga, Ricardo Fontes-Carvalho

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction: The ideal treatment technique for coronary bifurcation lesions remains unknown. Although single-stenting strategy has been recommended by default, little evidence exists regarding clinical outcomes between single vs double-stenting in current practice.
Objectives: To compare procedural details and clinical outcomes between single vs double-stenting techniques in true bifurcation coronary lesions.
Methods: Retrospective study of all patients (pts) referred for percutaneous coronary intervention (PCI) of true bifurcation lesions between June 2018 and June 2020. Only Medina X,X,1 lesions were included. Pts were split in 2 groups: group 1 (single-stenting) and group 2 (double-stenting). Procedural details and clinical outcomes were assessed. Acute and long-term adverse events included procedural complications (a composite outcome of side branch occlusion, coronary iatrogenic dissection and type 4 acute myocardial infarction (AMI)) and a composite of cardiovascular death, AMI, stroke, re-restenosis and reintervention, respectively.
Results and Discussion: A total of 118 pts were included, 74.6% male, mean age of 66.4 ± 11 years. Ninety-five pts (80.5%) were treated with single-stenting (G1) and 23 pts (19.5%) with double-stenting technique (G2). Both groups were well matched regarding baseline characteristics and clinical presentation. T and protrusion (TAP) and minicrush were the most frequent double-stenting techniques (43.5% and 21.7%). G2 lesions mainly involved the left main (LM) and proximal left anterior descendent artery (LAD) (52.2%) and in G1 mid LAD (34.7%). LM lesions were more common in G2 (26.1% vs 8.4%; p = 0.030). G1 had more lesions Medina 1,1,1 (75.8% vs 52.2%; p = 0.025) and less Medina 0,1,1 (9.5% vs 30.4%; p = 0.015). Proximal optimization technique and kissing balloon occurred more in G2 (p < 0.05). G2 had more intravascular ultrasound guided PCI (p = 0.046). Femoral access, heparin, contrast and radiation dose, and fluoroscopy time were higher in G2 (p < 0.05). Acute adverse composite outcome was similar in both groups (G1 13% vs G2 14.3%; p = 0.855). Median follow-up was similar (G1 16.8 ± 7.9 and G2 19.7 ± 8.8 months; p = 0.127). G1 had less occurrence of long-term adverse composite outcome (7.4% vs 26.3%; p = 0.032). Excluding interventions in LM, G2 had more significant incidence of acute events (20% vs 2.6%; p = 0.028), and higher rate of long-term adverse events (20% vs 4.2%; p = 0.056). In interventions of the LM only, no differences were noticed in acute and long-term composite events between groups.
Conclusions: Double-stenting techniques in true coronary bifurcation lesions included more often LM lesions and were complex procedures requiring frequently intracoronary imaging. Although acute adverse events were similar to those of single-stenting, long-term adverse outcomes were more frequent in double-stent group, except for LM lesions.

PO 202. WHAT IS THE CLINICAL BENEFIT OF CORONARY CHRONIC TOTAL OCCLUSIONS TREATMENT BY PERCUTANEOUS CORONARY INTERVENTION? 2-YEAR EXPERIENCE IN ANGIOGRAPHY LABORATORY

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[1]Centro Hospitalar do Algarve, EPE/Hospital de Faro. [2]Centro Hospitalar e Universitário do Algarve.

Introduction: Coronary chronic total occlusions (CTO) are relatively common findings in the context of coronary angiography. The indication for revascularization of this type of lesions remains controversial. The recommendations of international cardiology societies consider the treatment of CTO by percutaneous coronary intervention (PCI) in selected patients, but this technique is not yet widely used in this context.
Objectives: Characterize the patient population undergoing CTO PCI and analyze its clinical benefit. Also, try to identify patient profiles according to the composite outcome (angina, heart failure symptoms (HF), myocardial infarction (MI) or death) in short and medium term (30 days (D) and 180D).
Methods: Observational and retrospective study with descriptive and comparative analysis of patients submitted to CTO PCI, between 1 January 2019 and 31 December 2020. A descriptive analysis was carried out. Chi-Square test was used for categorical variables and the T-Student test for numerical variables, with a significance level of 95%. CHIAD algorithm was applied to identify patient profiles, whose dependent variable was the presence or absence of the composite outcome (fixed 15 parent nodes- 5 children nodes). For statistical analysis, SPSS 24.0 was used.
Results: 177 patients were identified, with a mean age of 65.4 years (standard deviation of 11.1), 51% were female. The most frequent location of CTO was the right coronary artery in 41.2%. The composite outcome occurred in 23% (30D) and 16% (180D) of patients, regardless of past medical history. Angina was present in 9.4% (30D) and 5.3% (180D); HF symptoms in 12.3% (30D) and 5.3% (180D); MI in 2% (180D) mortality in 1.8% (30D) and 4.7% (180D). The complication rate was 5.1%, mostly cardio-respiratory arrest (2.5%) and vessel dissection (1.7%). In a logic of dependence and profiles, patients with LVEF> 36% (80.1%-p = 0.017), without HF symptoms (82.9%-p = 0.007) and non-smokers/ex-smokers (87.6%-p = 0.043), were those with the greatest benefit at 30D. Patients with a history of non-ST segment elevation MI (24.5%-p = 0.018) and chronic kidney diseade (37.5%-p = 0.048) were those with most occurrences presented at 180D.
Conclusions: This analysis highlights the experience of the angiography laboratory. In this pool, the majority of patients experienced evident clinical improvement and recovered in short and medium term. The rate of serious events during and after the procedure was low. This analysis suggests that the greatest benefit were found in patients with LVEF> 36%, who didn´t develop post-procedure HF symptoms and in non-smokers/ex-smokers.

PO 203. THE IMPACT OF CORONARY CHRONIC TOTAL OCCLUSION ANGIOPLASTIES ON LEFT VENTRICULAR FUNCTION: 2-YEAR EXPERIENCE IN ANGIOGRAPHY LABORATORY

Hugo Alex Costa, Raquel Fernandes, Miguel Espírito Santo, Teresa Mota, João Bispo, Daniela Carvalho, Ana Marreiros, Hugo Palmeiro, João Guedes, Hugo Vinhas, Jorge Mimoso, Ilídio Jesus

Centro Hospitalar do Algarve, EPE/Hospital de Faro.

Introduction: Coronary chronic total occlusions (CTO) are relatively common findings in the context of coronary angiography. The indication for revascularization of this type of lesions remains controversial. The recommendations of international cardiology societies consider the treatment of CTO by percutaneous coronary intervention (PCI) in selected patients, but this technique is not yet widely used in this context.
Objectives: Analyze the impact of CTO PCI on left ventricular function (LVEF), measured by the recovery of LVEF (positive variation-PV). Also analyze the profile of patients with greater cardiac functional benefit.
Methods: Observational and retrospective study with descriptive and comparative analysis of patients undergoing CTO PCI, between 1 January 2019 and 31 December 2020. Descriptive analysis was carried out regarding the demographic and clinical characteristics. Chi-Square test was used for categorical variables and the t-Student test for numerical variables, with a significance level of 95%. CHIAD algorithm was applied to identify patient profiles, whose dependent variable was LVEF variation, and fixed 15 parent nodes and 5 children nodes. For statistical analysis, SPSS 24.0 was used.
Results: 177 patients were identified, with a mean age of 65.4 years (standard deviation of 11.1), 51% were female. The most frequent location of CTO was the right coronary (RCA) in 41.2%. The mean LVEF was 46.9% with standard deviation of 9.9. 61.5% of patients had PV, on average rising 14% (p = 0.000). The patients who benefited the most were those with LVEF < 49% (81.8% of PV - p = 0.000), compared to those with LVEF [49%-58%] (41.7% of PV - p = 0.000) and LVEF > 58% (30.8% of PV - p = 0.00). In the

multivariate analysis in a logic of dependency and profiles, patients with LVEF < 49% (81.8% PV - p = 0.000), who didn´t develop HF symptoms at 180D (85.7% PV - p = 0.001) and angina at 30D (90.5% PV - p = 0.020) were those with the highest PV of LVEF.
Conclusions: This analysis highlights the experience of the angiography laboratory. In this pool, the RCA was the most affected by CTO. Most patients had LVEF recovery, rising by an average of 14%. Lower LVEF patients appear to have greater potential for left ventricular recovery. The analysis suggests that benefit were greater in patients with medium range or reduced LVEF that didn´t develop post-procedure HF symptoms and angina.

PO 204. WHAT IS THE CLINICAL BENEFIT OF LEFT MAIN CORONARY ARTERY TREATMENT BY PERCUTANEOUS CORONARY INTERVENTION? 2-YEAR EXPERIENCE IN ANGIOGRAPHY LABORATORY

Hugo Alex Costa, Miguel Espírito Santo, Raquel Fernandes, Teresa Mota, João Bispo, Daniela Cavalho, Ana Marreiros, Hugo Palmeiro, João Guedes, Hugo Vinhas, Jorge Mimoso, Ilídio Jesus

Centro Hospitalar do Algarve, EPE/Hospital de Faro.

Introduction: The treatment of choice of left main coronary artery (LMCA) disease has been subject to intense debate and investigation in the last decade. More recent studies showed benefit of percutaneous coronary intervention (PCI) in patients with less complex coronary anatomy. Although it is not the standard treatment, the use of this technique has been increasing.
Objectives: Characterize the patient population undergoing LMCA PCI and analyze its clinical benefit. Also, try to identify patient profiles according to the composite outcome (angina, heart failure symptoms (HF), myocardial infarction (MI) or death) in short and medium term (30 days (D) and 180D).
Methods: Observational and retrospective study of patients submitted to LMCA PCI, between 1 January 2019 and 31 December 2020. A descriptive analysis was carried out. Chi-square test was used for categorical variables and the t-Student test for numerical variables, with a significance level of 95%. CHIAD algorithm was applied to identify patient profiles – composite outcome was the dependent variable (fixed 15 parent nodes and 5 children nodes). For statistical analysis, SPSS 24.0 was used.
Results: 120 patients, mean age of 70.4 years (standard deviation of 10.8), 76% were male. 81.7% had multivessel disease, with LMCA-anterior descendig artery injury being the most frequent (31.7%). The average LVEF was 49%. The complication rate was 15.8%, most vessel dissections. The most serious complications (cardio-respiratory arrest and cardiogenic shock) occurred in 0.8% of cases. The composite outcome occurred in 25.2% (30D) and 13.3% (180D), regardless of past medical history and number/type of vessels affected. The presence of angina was 9.9% (30D) and 1.3% (180D); HF symptoms in 13.5% (30D) and 4.8% (180D); MI in 2.7% (30D) and 1.2% (180D) and mortality in 2.7% (30D) and 2.4% (180D). In a logic of dependence and profiles, patients with LVEF [45-55%] (95.6%-p = 0.003) who treated the lesions in first intention (AdHoc) (100%, p = 0.009) presented fewer occurrences at 30D. Patients with occurrences at 30D (65.2%, p = 0.001) or without PV of LVEF (66.7%, p = 0.016) and dyslipidemia (53.8%, p = 0.027) were those with most occurrences at 180D.
Conclusions: This analysis highlights the experience of the angiography laboratory. The majority of patients experienced evident clinical improvement and recovered in short and medium term. The rate of serious events was low. The analysis suggests that the greatest benefit were found in the profile of patients with LVEF [45-55%] with an AdHoc approach.

PO 205. THE IMPACT OF LEFT MAIN CORONARY ARTERY ANGIOPLASTY ON LEFT VENTRICULAR FUNCTION: 2-YEAR EXPERIENCE IN ANGIOGRAPHY LABORATORY

Hugo Alex Costa, Teresa Mota, Miguel Espírito Santo, Raquel Fernandes, João Bispo, Daniela Carvalho, Ana Marreiros, Hugo Palmeiro, João Guedes, Hugo Vinhas, Jorge Mimoso, Ilídio Jesus

Centro Hospitalar do Algarve, EPE/Hospital de Faro.

Introduction: The treatment of choice of left main coronary artery (LMCA) disease has been subject to intense debate and investigation in the last decade. More recent studies showed benefit of percutaneous coronary intervention (PCI) in patients with less complex coronary anatomy and good left ventricular function (LVEF). Although it is not the standard treatment, the use of this technique has been increasing.
Objectives: Analyze the impact of LMCA PCI on left LVEF, defined by its recovery (positive variation-PV). Also analyze the profile of patients with greater cardiac functional benefit.
Methods: Observational and retrospective study with descriptive and comparative analysis of patients undergoing LMCA PCI, 1 January 2019 and 31 December 2020. Descriptive analysis was carried out regarding the demographic and clinical characteristics of the patients. Chi-Square test was used for categorical variables and the t-Student test for numerical variables, with a significance level of 95%. CHIAD algorithm was applied to identify patient profiles, whose dependent variable was LVEF variation, and fixed 15 parent nodes and 5 children nodes. For statistical analysis, SPSS 24.0 was used.
Results: 120 patients were identified, with a mean age of 70.4 years (standard deviation of 10.8), 76% were male. 81.7% had multivessel disease, with LMCA-anterior descendig artery injury being the most frequent in 31.7%. The average LVEF was 49.4% with standard deviation of 11.2. 82.5% of patients had PV, on average rising 20%. Patients who benefited the most were those with LVEF ≤ 56% (88.7% PV, p = 0.031), compared to those with LVEF> 56% (56.5% PV, p = 0.031). In a logic of dependency and profiles, patients with LVEF ≤ 56% (88.7% PV, p = 0.031), who do not develop symptoms/occurrences at 30D (94.5% PV, p = 0.013), without complications during PCI (96.9% of PV, p = 0.006) and with shorter procedures < 161m (100% of PV, p = 0.004) are those with the highest PV of LVEF.
Conclusions: This analysis highlights the experience of the angiography laboratory. In this pool of patients, the average LVEF was 49%. The majority of patients recovered from LVEF, rising by an average of 20%. Lower LVEF patients appear to have a greater potential for left ventricular recovery. The analysis suggests that the benefit were greater in patients with LVEF ≤ 56% that didn´t develop symptoms or complications and had shorter procedures.

PO 206. TRANSCATHETER AORTIC VALVE IMPLANTATION IN VERY OLD PATIENTS: A SINGLE-CENTRE EXPERIENCE

Mariana Ribeiro da Silva, Gualter Santos Silva, Pedro Ribeiro Queirós, Mariana Brandão, Diogo Santos Ferreira, Cláudio Guerreiro, Adelaide Dias, Daniel Caeiro, Olga Sousa, Alberto Rodrigues, Pedro Braga, Ricardo Fontes-Carvalho

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Introduction: Transcatheter aortic valve implantation (TAVI) is a well-established alternative to surgery for the treatment of patients (pts) with severe aortic stenosis at all ranges of surgical risk. The number of very old pts with severe aortic stenosis treated with TAVI is growing.
Objectives: To compare the outcome of very old (≥ 85 years) with that of younger (< 85 years) pts undergoing TAVI in common practice.
Methods: Retrospective study of all pts submitted to TAVI between 2010 and 2018. Data were analyzed regarding procedural outcome, 30-day, and 1-year outcomes of very-old compared to younger pts.
Results: We included 545 pts, 274 were female (50.3%), mean age of 79.6 years, and mean STS of 5.3. Between that period of time, 153 pts had ≥ 85 years (28.1%). Very old pts were significantly more often female (64.1% vs 44.9%, p < 0.001) and had more often chronic kidney disease (78.4% vs 55.9%, p < 0.001). Younger pts had more often diabetes mellitus (44.6% vs 19.6%, p < 0.001), and were more often active smokers (19.8% vs 4.9%, p < 0.001). Also, younger pts had significantly more frequently coronary disease (77.9% vs 45.1%, p = 0.01), previous coronary artery bypass graft surgery (18.7% vs 7.8%, p = 0.001), previous cardiac surgery (23.0% vs 9.8%, p = 0.002), peripheral artery disease (12.8% vs 4.5%, p = 0.007) and cancer (16.9% vs 8.3%, p = 0.020). Most very old pts were refused for aortic valve replacement surgery due to high surgical risk (75.9% vs 57.4%, p < 0.001), with a higher mean STS (6.3 vs 4.9, p < 0.001). No significant differences

were observed regarding technical aspects of the procedure between groups. During periprocedural period, very old pts had higher frequency of acute kidney injury (AKI) (21.6% vs 17.3%, p = 0.036), without significant differences in minor or major hemorrhage, need for blood transfusion, vascular complications (major or minor), cerebrovascular complications, need for permanent pacemaker implantation, new-onset of left bundle brunch block or atrial fibrillation. No significant differences were found in the rates of respiratory tract infections, the need for invasive mechanical ventilation or cardiogenic shock during hospital stay. The number of days in the intensive cardiac care unit and in general ward were comparable between both groups. Periprocedural (0.8% vs 2.6%), 30-day (2.7% vs 4.5%) and 1-year (13.1% vs 12.6%) mortality rates were equivalent between very-old and younger pts (p > 0.05 for all).
Conclusions: TAVI is a highly standardized procedure with increasing clinical applicability, including pts across all surgical risk spectrum and all ages. Although older pts usually have higher surgical risk, this study showed that, for our population, TAVI presents a very acceptable safety profile even in very old pts, maintaining a high procedural success. In older pts, attention should be paid to kidney function due to increased risk of AKI.

PO 207. TRANSESOPHAGEAL ECHOCARDIOGRAPHY VERSUS INTRACARDIAC ECHOCARDIOGRAPHY-GUIDED LEFT ATRIAL APPENDAGE OCCLUSION: A COMPARATIVE ANALYSIS

André Grazina, António Fiarresga, Ruben Ramos, Lidia de Sousa, Duarte Cacela, Luís Bernardes, José Viegas, Luísa Moura Branco, Ana Galrinho, Rui Cruz Ferreira

Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: The left atrial appendage occlusion (LAAO) procedure is a therapeutic option for stroke prevention in patients with atrial fibrillation (AF) which have contraindication to oral anticoagulants or still develop embolic events despite therapeutic anticoagulation. Transesophageal echocardiography (TEE) has been the gold standard to guide this procedure, with the intracardiac echocardiography (ICE) emerging as an alternative because of the advantage of reducing the general anesthesia burden compared to TEE.
Objectives: This study aims to compare the safety, procedure-related parameters, complications and outcomes between TEE-guided LAAO and ICE-guided LAAO.
Methods: In a tertiary center, patients who underwent TEE-guided LAAO and ICE-guided LAAO were compared retrospectively regarding technical success, procedure-related events, procedure-related parameters (fluoroscopy time, dose of radiation and contrast volume), 45 days-transthoracic echocardiography (TTE) and 1-year outcomes (mortality, stroke and major bleeding).
Results: 88 patients underwent LAAO between 2009 and 2020 (n = 43 with TEE, n = 45 with ICE). Baseline characteristics didn't show significant differences. Success was achieved in 95.3% (n = 41) and 95.6% (n = 43) of the patients in the TEE and ICE groups, respectively (OR 0.95, p = 0.96). Procedure-related complications (major vascular complications, perforation, device embolization) didn't show significant differences (14.0% vs 8.9%, OR 1.66, p = 0.46) in the TEE and ICE groups, respectively. Fluoroscopy time was inferior in the TEE group (29.1 ± 13.6 vs 44.1 ± 17.4 minutes, p = 0.001), while radiation dose (2,761 ± 1,555 vs 3,397 ± 2,118 mGy, p = 0.113) and contrast volume (220.3 ± 104.1 vs 204.0 ± 100.9 mL, p = 0.469) showed no significant differences. 45 days-TTE showed no significant differences between the TEE and ICE groups regarding mild peri-device leaks (14.0% vs 24.4%, p = 0.212), device thrombus (2.3% vs 0%, p = 0.990) and iatrogenic atrial septal defects, all mild (4.7% vs 13.3%, p = 0.174). 1-year outcomes showed no significant differences regarding stroke (9.3% vs 4.4%, p = 0.186), major bleeding (9.3% vs 2.2%, p = 0.78) and all-cause mortality (9.3% vs 11.1%, p = 0.38) between the TEE and ICE groups, respetively.
Conclusions: ICE-guided LAAO is associated with similar results, procedure-related events, procedure related-parameters (fluoroscopy time being the only exception) and 1-year outcomes, compared with TEE-guided LAAO, having the advantage of reducing the need of general anesthesia.

	TEE group (n=43)	ICE group (n=45)	p-value
Mean Age (years old)	74.2±9.7 y/o	75.9±10.3 y/o	p=0.44
Gender (% of male)	65.1% (n=28)	66.7% (n=30)	p=0.87
Type of AF (% of permanent)	74.4% (n=32)	68.9% (n=31)	p=0.57
Coronary Artery Disease	16.3% (n=7)	24.4% (n=11)	p=0.35
CHADS-VASc score	4.07±1.35	3.96±1.43	p=0.70
HAS-BLED score	3.63±1.00	3.62±1.11	p=0.98

Table 1. Baseline characteristics. (TEE=Transesophageal echocardiography; ICE=Intracardiac echocardiography; AF=atrial fibrillation)

	Total	TEE group (n=43)	ICE group (n=45)	OR	p-value	95% CI
Technical success	84	95.3% (n=41)	95.6% (n=43)	0.95	0.96	0.13 – 7.09
Procedure-related complications	10	14.0% (n=6)	8.9% (n=4)	1.66	0.46	0.44 – 6.35
Procedure-related parameters						
Fluoroscopy time (minutes)		29.1±13.6	44.1±17.4		0.001	
Radiation dose (mGy)		2761±1556	3397±2118		0.113	
Contrast volume (mL)		220.3±104.1	204.0±100.9		0.469	
45-days TTE						
Peri-device leaks	17	14.0% (n=6)	24.4%(n=11)	0.49	0.212	0.16 – 1.51
Device thrombus	1	2.3% (n=1)	0% (n=0)	--	0.990	--
Iatrogenic atrial septal defects	8	4.7% (n=2)	13.3% (n=6)	0.31	0.174	0.06 – 1.67
1-year outcomes						
All-cause mortality	6	9.3% (n=4)	4.4% (n=2)	2.21	0.380	0.38 – 12.71
Stroke	5	9.3% (n=4)	2.2% (n=1)	4.51	0.186	0.48 – 42.11
Major bleeding	9	9.3% (n=4)	11.1% (n=5)	0.82	0.780	0.21 – 3.28

Table 2. Results (TEE=Transesophageal echocardiography; ICE=Intracardiac echocardiography; TTE=Transthoracic echocardiography; OR=Odds Ratio; 95%CI=95% Confidence Interval)

PO 208. C-REACTIVE PROTEIN AS A PREDICTOR OF POST-TRANSCATHETER AORTIC VALVE IMPLANTATION CONDUCTION DISTURBANCES

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Introduction: One of the most important current limitations of transcatheter aortic valve implantation (TAVI) is conduction system abnormalities and subsequent need for permanent pacemaker (PM) implantation. Inflammatory changes around TAVI device have been suggested as a possible mechanism of acute conduction system dysfunction and C-reactive protein (CRP) as a predictor of mortality after TAVI.
Objectives: This study aims to explore the association of the post procedure CRP levels and new onset conduction abnormalities after TAVI.
Methods: Between 2009 and November of 2020, a total of 493 patients underwent TAVI. Blood CRP levels were determined daily until hospital discharge. Continuous Electrocardiogram (ECG) monitoring were performed in the first 24 hours in all patients and 12-lead ECG were recorded daily thereafter. 104 patients were excluded for having previous PM (n = 41), evident infection or other obvious reason for CRP elevation (n = 29) or having the CRP peak after 5 days of TAVI (n = 34). Peak CRP levels were compared in patients with (group 1) and without (group 2) new onset conduction abnormalities or in-hospital PM implantation. A ROC Curve was used to establish an optimal cut-off for this association.
Results: 389 patients were included in the study, 55% female, mean age 81.7 years old. New conduction abnormalities were observed in 46.8% (182) and PM implantation in 21.1% (82). Mean peak CRP levels was significantly higher in the group 1 vs 2 (80.9 vs 100.2 mg/L, p = 0.002). ROC analysis established a CRP peak level of 80 mg/L as the optimal cut-of-point. 48% (n = 186) had CRP peak levels superior to 80 mg/L (group A) and 52% (n = 201) equal or inferior

(group B). The baseline characteristics showed no significant difference between these groups. Peak CRP level superior to 80 mg/L was significantly associated with third degree atrioventricular (AV) block (OR 2.12, p = 0.005, 95%CI 1.25-5.00) or need for PM implantation (OR 1.82, p = 0.018, 95%CI 1.10-2.90), independently of the timing of the peak and baseline characteristics. No significative differences were seen in the prediction of left bundle branch block, first- or second-degree AV block by the CRP level.

Baseline characteristics	Group A n=201 (CRP peak ≤ 80mg/L)	Group B, n=186 (CRP peak > 80mg/L)	p-value
Mean Age (years old)	81.2 y/o	82.2 y/o	0.147
Gender (% of female)	54.2 %	55.4 %	0.735
Atrial Fibrilation	35.9 %	28.4 %	0.839
Coronary Artery Disease	40.1 %	42.2 %	0.908
LVEF <40%	12.3 %	11.4 %	0.843

Table 1. Baseline characteristics of the two groups. (CRP=C-Reactive Protein; LVEF=Left Ventricle Ejection Fraction)

Outcomes	Total	Group A, n=201 (CRP ≤ 80mg/L)	Group B, n=186 (CRP >80mg/L)	OR	p-value	95% CI
1st degree AV block	18	13	5	2.503	0.087	0.86 – 7.16
2nd degree AV block	5	3	2	1.394	0.720	0.23 – 8.44
3rd degree AV block	**73**	**27**	**46**	**2.119**	**0.005**	**1.25 – 5.00**
Pacemaker implantation	**82**	**33**	**49**	**1.821**	**0.018**	**1.10 – 2.90**
Left bundle branch block	96	43	53	0.683	0.107	0.43 – 1.09
Right bundle branch block	12	7	5	1.306	0.653	0.41 – 4.19

Table 2. Results (CRP=C-Reactive Protein; AV=Atrioventricular; OR=Odds Ratio; 95%CI=95% Confidence Interval)

Conclusions: In this study, post-TAVI peak CRP levels in the first 5 days after TAVI was significantly associated with development of complete AV block or need for PM implantation. Further studies are necessary to validate these findings.

PO 209. IMPACT OF THE COVID-19 PANDEMIC IN THE INTERVENTIONAL CARDIOLOGY: RESULTS OF A TERTIARY CENTRE

André Azul Freitas[1], Valdirene Gonçalves[2], James Milner[1], Cátia Ferreira[1], José Paulo Almeida[1], Sofia Martinho[1], João Rosa[1], Gustavo Campos[1], João André Ferreira[1], Elisabete Jorge[1], Marco Costa[1], Lino Gonçalves[1]

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Introduction: Cardiovascular diseases are the leading cause of death worldwide and the pandemic caused by coronavirus disease 2019 (COVID-19) has forced profound changes in the care of patients with cardiac conditions. In Portugal, an increase in mortality beyond that attributed solely to COVID-19 was observed. We aimed to realize how COVID-19 has changed the activity of our Interventional Cardiology Unit.
Methods: We retrospectively assessed all patients submitted to any interventional procedure in 2019 and 2020. A total of 7621 patients and 9163 procedures were evaluated. The mean weekly numbers of coronarography, angioplasty, right heart catheterization and structural heart intervention during 2019 were assessed and were compared with the first COVID-19 wave (comprising March and April 2020) and the second COVID-19 wave (including the time period from October to end of December 2020).
Results: Mean age was 65.2 ± 16.6 years with 72% being male. In the first COVID-19 wave there was a significant reduction in the mean weekly numbers of all procedures, with a 64% decline in coronarographies (30.9 ± 29.3 vs 87.2 ± 12.9, p < 0.001), 48% in angiographies (15.7 ± 10.9 vs 30.2 ± 5.7, p = 0.004), 51% in right heart catheterizations (5.3 ± 5.9 vs 10.9 ± 4.5, p = 0.002) and 57% in structural heart interventions (1.1 ± 1.9 vs 2.6 ± 2, p = 0.044). Although there was an evident recovery in activity (Figure), comparing to 2019, the second wave also showed a significant lower number of procedures, with 24% fewer coronarographies (66.6 ± 20.6 vs 87.2 ± 12.9, p = 0.003) and 13% fewer angiographies (26.4 ± 7.6 vs 30.2 ± 5.7, p = 0.004). Contrariwise, in the second wave there was no difference in the number of right heart catheterizations (7.3 ± 6.1 vs 10.9 ± 4.5, p = 0.055) or structural heart interventions (1.6 ± 1.6 vs 2.6 ± 2, p = 0.106).
Conclusions: In our Interventional Cardiology Unit, COVID-19 led to a significant reduction of procedures in the first and second pandemic waves. The effect on the increase in morbidity and mortality has yet to be determined. Health authorities should focus attention in defining measures to amend the consequences of this documented activity reduction.

PO 210. IN-HOSPITALAR MORTALITY AFTER STEMI IN PORTUGAL: DO PATIENT LOCATION AFFECT OUTCOME?

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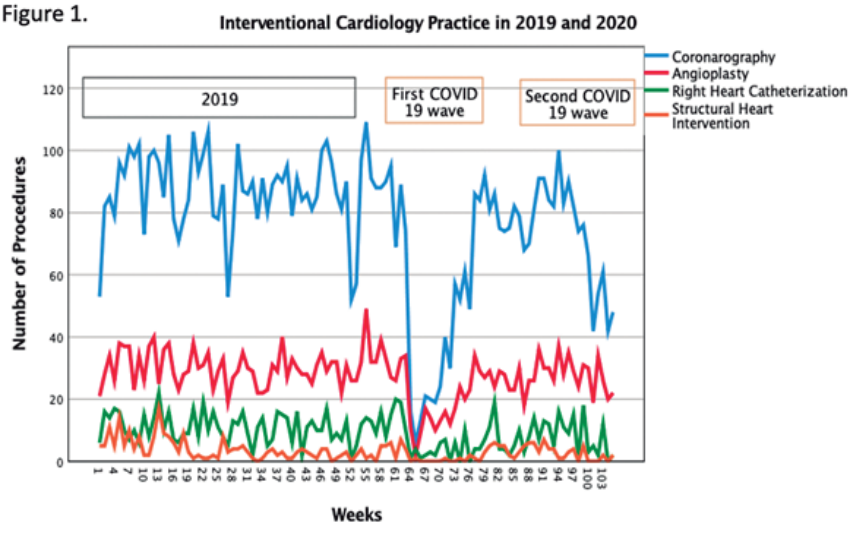
Centro Hospitalar e Universitário de Coimbra/Hospitais da Universidade de Coimbra.

Introduction: Portuguese Registry of Acute Coronary Syndromes (PRoACS) reported a sustained decrease of in-hospital STEMI mortality, being 3.4% in 2018, one of the lowest in Europe. In our tertiary centre, serving the biggest referral geographic area in Portugal, a higher mortality has been described.

Figure 1.



PO 209 Figure

In this study we aimed to assess in-hospital STEMI mortality and to evaluate if the patient origin affected the outcome.
Methods: We retrospectively assessed all patients submitted to coronarography due to STEMI between January 2019 and July 2019. From 195 procedures, 163 patients had criteria for myocardial infarction according to the international definition and were included in our analysis. Patient characteristics, pattern of emergency admission (including referring hospital) and outcomes were evaluated.
Results: Mean age was 64.7 ± 12.6 years with 79% being male. In-hospital mortality was 9.8% and it was 12.3% at 6 months. Transference from a non-PCI centre occurred in 38.7% with 46% of them being transferred again to the referring hospital. Patients from non-PCI centre had similar patients' characteristics. However, they showed an increase in system delay (183.9 ± 242 min vs 91.1 ± 92 min, p = 0.005), a lower ejection fraction at hospital discharge (40.7% ± 10.9% vs 47.5% ± 8.5%, p = 0.001) and less chance to have a non-culprit coronary lesion to be treated (11.7% vs 27.3%, p = 0.02). Nevertheless, there were no differences regarding in-hospital (7.9% vs 11%, p = 0.185) or 6-month mortality (11.1% vs 13%, p = 0.273).
Conclusions: In our hospital, in-hospital mortality after STEMI is similar to the reported values in European countries but it is substantially higher than the ones reported by PRoACS. Transferred patients from a non-PCI hospital may have a higher system delay and a consequently worse prognosis, but they do not seem to have an increased short-term mortality.

PO 211. CORONARY ARTERY PERFORATIONS: 10-YEAR EXPERIENCE OF A LARGE VOLUME CENTRE

Nelson Cunha, Miguel Nobre Menezes, Tiago Rodrigues, Pedro Silvério António, Sara Couto Pereira, Pedro Alves da Silva, Beatriz Valente Silva, Joana Brito, Diogo Torres, Eduardo Infante de Oliveira, José Duarte, José Marques da Costa, Fausto J. Pinto, Pedro Pinto Cardoso

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Introduction: Coronary artery perforation (CAP) is a rare but a potential life-threatening complication of percutaneous coronary intervention (PCI). With increasingly complex procedures, the risk of such complications is increased. Thus, learning from these cases is of paramount importance.
Objectives: To review the incidence, procedural details and outcomes of CAP in a high-volume PCI centre.
Methods: Single-centre retrospective study of consecutive patients (pts) with CAP between January 2010 and September 2020. Pts' baseline characteristics were collected. Data regarding PCI (coronary anatomy, type of perforation and management strategy) were analysed. Clinical records were also analysed to review the immediate outcome, as well as major cardiovascular events (MACE) in the long term follow-up, defined as death, myocardial infarction (MI) or target lesion revascularization (TLR).
Results: A total of 39 pts (mean age 74 ± 10 years, 56% male) had CAP during PCI (0.3% of all PCI). The relevant associated comorbidities were hypertension (87%), dyslipidemia (58%), diabetes (42%) and chronic kidney disease (40%). Wire related CAPs accounted for 31% (n = 12) of the cases and ballooning/stenting related CAPs accounted for the remaining 69% (n = 27). CAP occurred mostly in the left anterior descending artery (51%) followed by the circumflex (26%) and the right coronary artery (24%). 9 cases (23%) occurred in the setting of chronic total occlusion (CTO) PCI. Wire related CAPs were mostly associated non-workhorse wires: *Ultimate Bros 3* (25%); *Whisper* (25%); *Choice PT* (8%); *Fielder XT-A* (8%); *Ultimate Cross 3* (8%); *Gaia* (8%); *Runthrough NS* (8%). CAPs were tackled with prolonged proximal balloon inflation in 33% of the patients; prolonged proximal balloon inflation plus placement of a covered stent in 31%; placement of a covered stent alone in 46%; reversal of anticoagulation (RA) alone in 15%. In one case CAP was resolved with 2 microcoils. In the remaining patient fat embolization was successfully deployed to seal the perforation site. Tamponade requiring pericardiocentesis occurred in 6 pts (15%) and two pts needed emergent surgery (5%). The intra-procedural mortality was 5% (n = 2). During a mean follow-up of 37 months, MACE occurred in 14 pts (36%). There were 2 cases of MI (1 in a perforated vessel that was treated with RA alone) and 2 cases of TLR (5%) due to restenosis of the covered stent. The overall mortality was 27%.
Conclusions: CAPs were an important complication of PCI. The vast majority of cases were successfully treated and intra-procedural mortality was low, emphasizing the importance of swift action. Most cases required the use of specific devices, which should be routinely available "on the shelf" in all cath labs. Despite good short-term results, long-term outcomes were adversely affected, with significant rates of MACE, highlighting the need for awareness, especially in complex interventions.

PO 212. PERCUTANEOUS CORONARY INTERVENTION FOR UNPROTECTED LEFT MAIN DISEASE IN ACUTE CORONARY SYNDROMES: IN-HOSPITAL AND MID-TERM (THREE YEARS) FOLLOW-UP

André Dias-Frias, André Luz, Ricardo Costa, Andreia Campinas, Anaisa Pereira, André Alexandre, Patrícia Rodrigues, Raquel Baggen-Santos, Bruno Brochado, João Silveira, Severo Torres

Centro Hospitalar do Porto, EPE/Hospital Geral de Santo António.

Introduction: Percutaneous coronary intervention (PCI) of unprotected left main artery (ULM) is increasingly emerging as a valid option, not only in low-SYNTAX score patients, but also in high-surgical risk patients.
Objectives: To evaluate the in-hospital and 36-month outcomes of patients undergoing ULM PCI.
Methods: Retrospective study of all consecutive patients who underwent ULM PCI at our Centre between 2008 and 2017. Clinical follow-up was conducted for a total of 36 months in all patients. Major adverse cardiovascular events (MACE) was defined as a composite of all-cause death, target lesion failure (TLF) and non-fatal/non-TLF myocardial infarction (MI).
Results: 72 patients were included, 71% males with median age 65.5 [interquartile range (IQR) 57.25-79] years. 35% were diabetics and 21% had history of MI. The indication for ULM PCI was non-ST segment elevation acute coronary syndrome (NST-ACS) in 71% and ST-segment elevation myocardial infarction (STEMI) in 29% of cases. Patients presented in Killip class III/IV in 19% and class IV/IV in 24% of cases, respectively. Median Syntax Score and EuroScore II were 27 (IQR 19.000-36.875) and 5.195 (IQR 2.1100-16.2725), respectively. Distal left main was involved in 50% of cases. 20% of NST-ACS patients did not undergo Heart Team evaluation due to hemodynamic instability, while surgical risk was the commonest refusal reason (66%). In-hospital mortality was 19% (7.8% NST-ACS; 47.6% STEMI; 100% of deaths occurred in Killip class ≥ III/IV at presentation); 3% had a periprocedural stroke (1 posterior circulation infarct and 1 lacunar cerebral infarct) and 1% had sub-acute stent thrombosis. At 36 months of follow-up, MACE occurred in 38% of the 58 in-hospital survivors: 14% had TLF, 5% non-fatal MI and 22% died. In univariate analysis, STEMI (p < 0.001), lower creatinine clearance (p = 0.003), higher Killip class at presentation (p < 0.001), SYNTAX score (p < 0.001) and EuroScoreII score (p < 0.001) were associated with in-hospital mortality, while age was not (p = 0.921).
Conclusions: Our study showed that ULM PCI is a feasible option in the treatment of acute coronary syndromes, with good in-hospital results for the non-critical patient and acceptable results at 36 months follow-up.

PO 213. CLINICAL OUTCOMES IN LEFT MAIN PERCUTANEOUS INTERVENTION: CAN WE DO BETTER?

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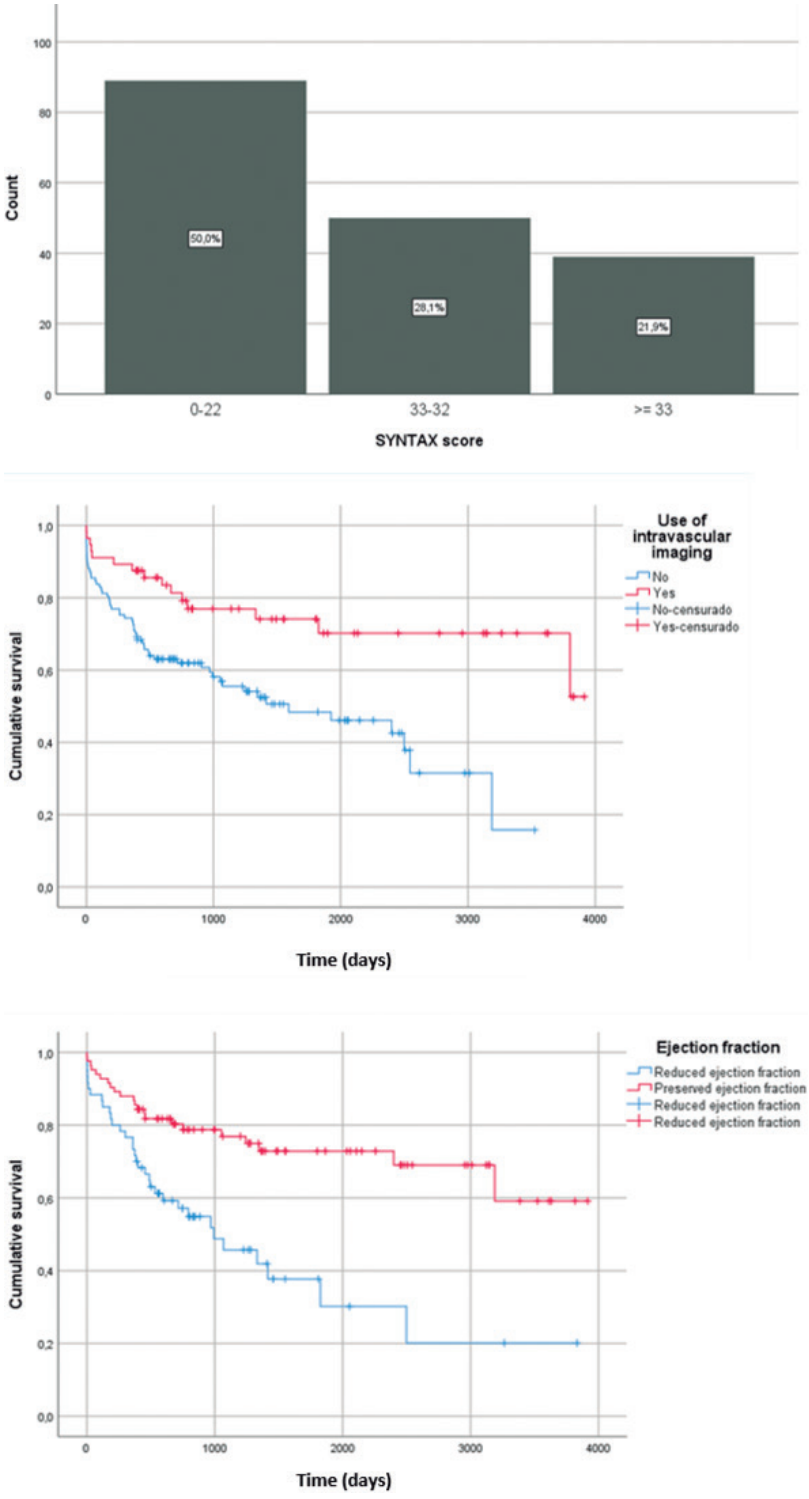
Centro Hospitalar e Universitário de Coimbra.

Introduction: Coronary artery bypass grafting surgery (CABG) is established as the standard revascularization strategy for patients with left main (LM) coronary disease. Recent advances in drug-eluting stents have begun to level the playing field between percutaneous coronary intervention (PCI) and CABG. Different randomized clinical trials have shown the safety and



PO 213 Figure

efficacy of PCI as an alternative to CABG, especially in patients with low coronary complexity. As such, coronary angioplasty is being increasingly performed in left main coronary artery lesions.

Objectives: To assess the effect of selected clinical and angiographic characteristics as well as procedure techniques on long-term clinical outcomes of PCI in patients with LM disease.

Methods: Retrospective, observational study including patients who underwent non-emergent LMCA angioplasty between January 2010 and December 2019. Data was collected from the emergency department and hospitalization registries. Multivariate model with Cox regression was elaborated including all clinical, analytical and angiographic significant variables identified in univariate analysis for the compose outcome of death or myocardial infarction.

Results: A total of 179 patients were included (median age 72 [65-80], 134 (74.8%) males). Median follow-up was 27 [12-53] months. Median SYNTAX score was 23 [15-31]. Long-term all-cause mortality was 66 (36.9%). Myocardial infarction at follow-up occurred in 16 (8.9%). Cerebrovascular events occurred in 4 (2.2%). Concerning the PCI procedural and clinical

aspects with impact on the compose outcome (death or myocardial infarction), we found in the multivariate analysis that the independent predictors were the use of intravascular imaging (HR 0.34, CI 0.16 to 0.73, p = 0.006) and a left ventricular ejection fraction ≤ 50% (HR 1.96, CI 1.07 to 3.61, p = 0.030).
Conclusions: Intravascular imaging-guided PCI in LM disease has an important prognostic impact on long-term outcomes and its routine use is crucial to be a competitive revascularization strategy.

PO 214. IMPACT OF TRANSCATHETER MITRAL VALVE REPAIR ON ECHOCARDIOGRAPHIC PARAMETERS OF THE RIGHT VENTRICLE – A CLOSER LOOK TO THE FORGOTTEN HALF OF THE HEART

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Introduction: Transcatheter mitral valve repair has demonstrated to reduce acute heart failure (HF) hospitalizations, when compared to optimal medical treatment. Right ventricle (RV) dysfunction has a major effect on the prognosis of patients (P) with HF and mitral regurgitation (MR). In spite of this, the majority of studies assessing RV function in the literature focused on the prognostic role of baseline RV function, with only few reports available regarding RV.
Objectives: The aim of this study is to assess the change in echocardiographic parameters related to the RV following successful mitral valve repair using the MitraClip™.
Methods: A retrospective cohort study from consecutive P submitted to transcatheter mitral valve repair in our centre, between November 2018 and November 2020. All P underwent echocardiographic assessment (transthoracic and transoesophageal) for evaluation of the severity and etiology of MR, ventricular function and dimensions for conformation of suitability for the MitraClip™ procedure. Follow-up with transthoracic echo was performed routinely 3 months after the procedure. All baseline, procedural and follow-up data were collected. Changes between baseline and follow-up parameters were assessed using the paired t-test.
Results: A total of 25 P underwent MitraClip™ implantation (87.5% male sex, mean age of 75.7 ± 8). In this cohort, all P suffered from severe MR (mean effective regurgitant orifice area of 40.4 ± 9 mm^2), 62.5% P with a functional etiology. As comorbidities, 66.7% had atrial fibrillation, 25% had coronary artery disease and 37.5% had chronic renal disease. Mean NT-proBNP level on admission was 2,291 ng/L. On the pre-procedure echocardiography, 29.2% P had reduced ejection fraction of the left ventricle, 66.7% P had pulmonary hypertension (mean pulmonary artery systolic pressure (PASP) of 43.2 ± 11 mmHg), 45.8% had RV systolic dysfunction and 33% had RV dilatation (mean basal diameter of 41 ± 8 mm). On follow-up, long-term mortality was 8.3%, with hospital readmissions in 25% of P. After a mean echocardiography follow-up of 3.2 ± 1.5 months following the MitraClip procedure, in the overall study population, TAPSE increased from 16.9 ± 4 to 19.2 ± 5 mm (p = 0.005) and mean basal diameter of the RV reduced from 41 ± 8 mm to 37 ± 6 mm (p = 0.02). Reduction of PASP from 43.7 ± 9 to 41.9 ± 10 mmHg did not reach statistical significance (p = 0.564).
Conclusions: The present study demonstrates that the MitraClip can lead to reverse RV remodelling in some P, improving its RV systolic function.

PO 215. PERCUTANEOUS CORONARY ANGIOPLASTY OF LEFT MAIN CORONARY ARTERY: DO WE EXEL?

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Introduction: Left main coronary artery (LMCA) disease is associated with increased morbidity and mortality. Early clinical trials comparing coronary artery bypass grafting surgery (CABG) with medical therapy showed better outcomes with CABG, establishing surgery as the standard revascularization strategy for this group of patients. More recently, different randomized clinical trials have shown the safety and efficacy of percutaneous coronary intervention (PCI) as an alternative to CABG, especially in patients with low coronary complexity.
Objectives: We aimed to determine the characteristics and outcomes of a cohort of patients admitted to the catheterization laboratory and submitted to LMCA angioplasty.
Methods: Retrospective, observational study including patients who underwent LMCA PCI between January 2010 and December 2019. Data was collected from the emergency department and hospitalization registries. Patients were divided according to the urgency of the procedure. We made a global analysis including baseline clinical and angiographic data. Finally we aimed to study the clinical outcomes (in-hospital and long-term all-cause mortality, myocardial infarction and cerebrovascular events at follow-up) excluding patients from the urgent subset, in which CABG was not considered an alternative.
Results: A total of 242 patients were included (median age 72 [64-81], 182 (75.2%) males). The baseline characteristics of the study population are listed in table 1. Median follow-up was 27 [12-53] months. Urgent revascularization was associated with higher in-hospital mortality (14/63 (22.2%) vs 7/179 (3.9%); p < 0.001). Long-term all-cause mortality for elective procedures was 66 (36.9%). Myocardial infarction at follow-up occurred in 16 (8.9%) patients and angiographic evidence of stent re-stenosis was 14 (7.8%). Cerebrovascular events occurred in 4/142 (2.2%). Only 2 (1.1%) patients needed subsequent CABG.
Conclusions: In this analysis we present the experience with LMCA angioplasty in a tertiary center. LMCA angioplasty in the emergency setting remains a challenge and is associated with increased mortality in the short term. However, it's becoming an increasing alternative to CABG in selected patients.

PO 216. SAME-DAY DISCHARGE AFTER ELECTIVE UNCOMPLICATED PERCUTANEOUS CORONARY INTERVENTIONS: SAFETY AND FEASIBILITY

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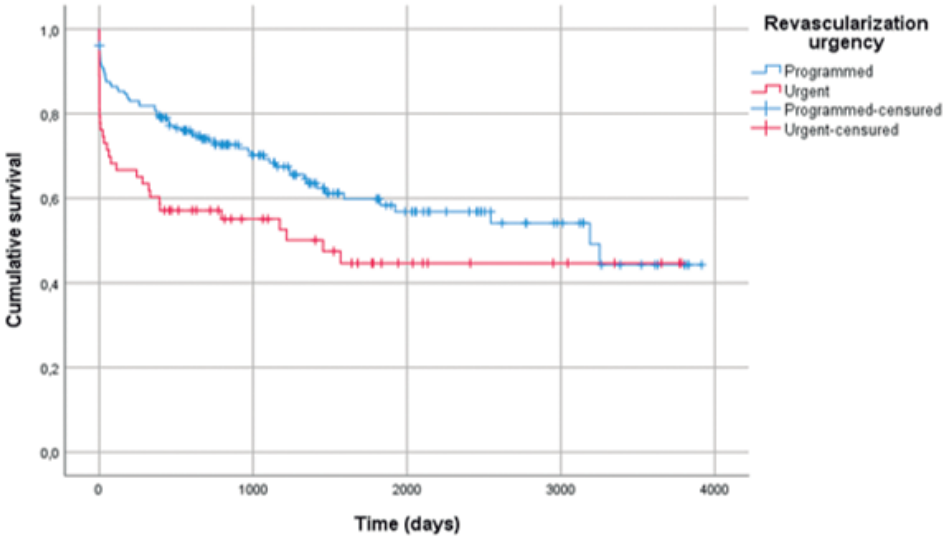
Hospital de Braga.

Introduction: Percutaneous coronary intervention (PCI) is the most commonly performed interventional procedure in developed countries. Radial access, improvement of catheter profiles and other technical advances have increased safety while maintaining a high degree of efficacy. Consequently, same-day discharge (SDD) can be considered for a significant number of patients who otherwise would have required admission.
Objectives: The authors aimed to evaluate safety and feasibility of elective outpatient PCI in low-risk selected patients.
Methods: A retrospective single-centre observational study of patients with chronic coronary syndromes who underwent elective PCI from October 2019 to November 2020. Patents who qualified same-day discharge were defined according to clinical, angiographic and sociodemographic characteristics. SDD-PCI patient, procedure characteristics and adverse events (all-cause mortality, acute coronary syndrome, stent thrombosis, reintervention, major bleeding, stroke, contrast-induced renal failure, vascular access complications) at 30-days were analysed.
Results: The majority of patients undergoing elective PCI were discharged in the same day (64%). During the observation period 94 patients had SDD-PCI (79% were male, age 66 ± 9). Of those, fourteen patients (15%) experienced multivessel revascularization. Left anterior descending artery was a target artery in 49 patients (52%); circumflex artery in 27 patients (29%) and right coronary artery in 33 patients (35%). There were no adverse events during the 30-day follow-up period of the patients treated in ambulatory regimen.
Conclusions: The presented descriptive analysis endorses that SDD-PCI is a safe procedure in selected patients. The potential role in decreasing

Table 1. Baseline clinical and angiographic characteristics stratified by urgency of the revascularization

	All patients (n = 242)	Urgent revascularization (n = 63)	Programmed revascularization (n = 179)	p value
Age – yr	72 [64-81]	69 [63-81]	72 [65-80]	0.447
Male sex	182 (75.2)	48 (76.2)	134 (74.8)	0.833
Clinical characteristics				
Hypertension	210/241 (87.1)	52/62 (83.9)	158/179 (88.3)	0.373
Diabetes mellitus	119/240 (49.6)	28/62 (45.2)	91/178 (51.1)	0.419
Insulin treated diabetes	41/240 (17.1)	10/62 (16.1)	31/178 (17.4)	0.817
Dyslipidemia	212/240 (88.3)	52/62 (83.9)	160/178 (89.9)	0.204
Smoking history	80/200 (40)	24/51 (47.1)	56/149 (37.6)	0.233
Body mass index	27.7 [25.3-31.1]	27.6 [24.3-29.8]	27.7 [25.6-31.3]	0.141
Atrial fibrillation	40/228 (17.5)	13/61 (21.3)	27/167 (16.2)	0.366
Chronic kidney disease	48/226 (21.2)	11/60 (18.3)	37/166 (22.3)	0.521
COPD	19/207 (9.2)	6/60 (10.0)	13/166 (7.8)	0.604
Significant VHD [a]	56/222 (25.2)	15/60 (25.0)	41/162 (25.3)	0.962
Prior myocardial infarction	62/235 (26.4)	9/60 (15.0)	53/175 (30.3)	0.02
Prior PCI	63/241 (26.1)	6/62 (9.7)	57/179 (31.8)	0.001
LVEF (≥ 50%)	100/196 (51.0)	16/50 (32.0)	84/146 (57.5)	0.002
Angiographic characteristics				
SYNTAX score				0.001
Low (score ≤ 22)	103/239 (43.1)	14/61 (23.0)	89/178 (50.0)	
Intermediate (score 23-32)	76/239 (31.8)	26/61 (42.6)	50/178 (28.1)	
High (≥ 33)	60/239 (25.1)	21/61 (34.4)	39/178 (21.9)	
Lesion localization				0.038
Proximal	61 (25.2)	9 (14.3)	52 (29.0)	
Medial	12 (5.0)	2 (3.2)	10 (5.6)	
Distal	169 (69.8)	52 (82.5)	117 (65.4)	
Initial strategy				0.171
Provisional stenting	123/179 (68.7)	41/54 (75.9)	82/125 (65.6)	
Two stent strategy	56/179 (31.2)	13/54 (24.1)	43/125 (34.4)	
2-stent technique				0.809
T-stent/TAP	12/56 (21.4)	3/13 (23.0)	9/43 (20.9)	
Cullote	22/56 (39.3)	5/13 (38.5)	17/43 (39.5)	
DK Crush	6/56 (10.1)	2/13 (15.4)	4/43 (9.3)	
Mini Crush	12/56 (5.0)	3/13 (23.1)	9/43 (20.9)	
Kissing stent	4/56 (1.7)	0	4/43 (9.3)	
Calcium technique				0.004
Rotablator	15/242 (6.2)	1 (1.6)	14 (7.8)	
Cutting-ballon	19/242 (7.9)	0	19 (10.6)	



PO 215 Figure

bed-shortage and hospital overcrowding is pivotal considering the actual healthcare problems associated with the COVID-19 pandemic.

Virtual Posters | Posters - I. Hypertension

PO 217. GENETIC POLYMORPHISMS ASSOCIATED WITH THE ONSET OF ESSENTIAL HYPERTENSION IN THE DIABETIC POPULATION

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Introduction: Essential hypertension (EH) is a common pathology in patients with Diabetes Mellitus, which implies a substantial increase in cardiovascular risk and can awaken or accelerate micro and macrovascular lesions of diabetes. The development of EH in diabetics can be genetically determined, however it is unknown which genetic polymorphisms may be involved in the onset of EH in diabetics.
Objectives: Investigate the genetic factors associated with the onset of EH in diabetic patients.
Methods: With a sample of 203 diabetic individuals, two groups were constituted, according to whether they had (n = 163) or not (n = 40) EH. The following genetic variants were analyzed: ACE I/D rs4340, ACE A2350G rs4343, AGT T174M rs4762, AGT M235T rs699, AGTR1 A1166C rs5186, CYP11B2 -344 C/T rs1799998, ADD1 G460W rs4961, SCNN1G G-173A rs5718, ADRB1 R389G rs1801253, ADRB2 R16G rs1042713, CYP17A1 T/C rs11191548, GNB3 C825T rs5443, ATP2B1 A/G rs2681472, in order to determine which genotypic frequencies are associated with EH in diabetics and calculated 4 genetic models (dominant, recessive, additive and multiplicative. Finally, a multivariate analysis was performed to determine which genetic variants are significantly and independently associated with EH in diabetics.
Results: The group of diabetic patients with EH was composed of 62% male (mean age 54.8 ± 6.9 years) and the control group without EH comprised 67.5% male (mean age 54.2 ± 6.5 years). Of the 13 studied genetic variants, AGTR1 was associated with the onset of EH in 3 models: dominant (OR 3.754; p = 0.001), additive (OR 3.095; p = 0.002) and multiplicative (OR 3.097; p = 0.001). An association was also found in ADD1 in the multiplicative model (OR 2.449; p = 0.041) and GNB3 in the dominant model (OR 2.135; p = 0.032). After multivariate analysis, CT+TT genotypes of GNB3 and AC+CC of AGTR1 were independent predictors of EH in the diabetic population with an OR of 2.360 (p = 0.021) and OR of 4.010 (p = 0.001), respectively.
Conclusions: The genetic variants GNB3 and AGTR1 were significantly and independently associated with the EH onset in the diabetic population. This result points to the existence of polymorphic genetic alterations that favor the onset of EH in the diabetic population. Diabetic individuals who have these genetic variants, with greater predisposition to EH onset, should have special careful in behavioral terms, such as salt consumption, to counteract this genetic trend and, thus, reduce cardiovascular risk.

PO 218. INTERACTION BETWEEN GENETIC AND NON-GENETIC FACTORS IN THE APPEARANCE OF KIDNEY FAILUREMICROALBUMINURIA IN HYPERTENSIVE INDIVIDUALS

Ana Célia Sousa[1], Bela Machado[1], Mariana Bilreiro[1], Carolina Aguiar[1], Eva Henriques[1], Sónia Freitas[1], Mariana Rodrigues[1], Sofia Borges[1], Graça Guerra[1], Ana Isabel Freitas[1], Ilídio Ornelas[1], Roberto Palma dos Reis[2], Maria Isabel Mendonça[1]

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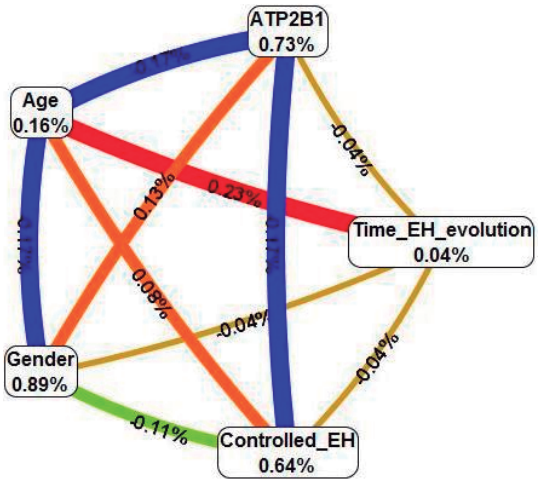
Introduction: Essential hypertension (EH) is one of the main causes of kidney failure and the association between these two clinical conditions, considerably increases cardiovascular risk.
Objectives: Evaluate the association and interaction between genetic and non-genetic factors in the onset of kidney failure/microalbuminuria in hypertensive individuals.
Methods: A total of 545 hypertensive individuals without diabetes (mean age 50.7 ± 7.9 years) entered in this study. All of them collected blood for biochemical analysis and 24-hours urine to determine microalbuminuria. A case-control study was performed depending on whether they had kidney failure/Microalbuminuria (n = 75) or not (n = 470). The factors associated with kidney failure were studied: age, gender, time of EH evolution, controlled hypertension and genetic variants associated with hypertension, namely ACE I/D rs4340, ACE A2350G rs4343, AGT T174M rs4762, AGT M235T rs699, AGTR1 A1166C rs5186, CYP11B2 -344 C/T rs1799998, ADD1 G460W rs4961, SCNN1G G-173A rs5718, ADRB1 R389G rs1801253, ADRB2 R16G rs1042713, CYP17A1 T/C rs11191548, GNB3 C825T rs5443, ATP2B1 A/G rs2681472. Logistic regression analysis was performed to estimate which variables were significantly and independently associated with the appearance of kidney failure/Microalbuminuria. Finally, we developed interaction models between genetic and non-genetic factors to assess the best model in the prediction of kidney failure/Microalbuminuria in hypertensives.
Results: Male gender (OR = 1.967; CI 1.178-3.286; p = 0.010) and the genetic variant ATP2B1 rs2681472 (OR = 1.871; CI 1.204-2.908; p = 0.005) were significantly and independently associated with kidney failure/Microalbuminuria in hypertensive patients. The best interaction model was the one that included time of EH evolution, male gender, age and ATP2B1, with cross-validation consistency of 9/10 and weighted test accuracy of 62%,



Association between genetic variants and Hypertension in diabetics

Genetic variants	Odds ratio (95% CI)	P-value
AT1R (AC+CC)	4.010 (1.771 – 9.078)	**0.001**
GNB3 (CT+TT)	2.360 (1.136 – 4.902)	**0.021**

Logistic regression, Forward wald method (SPSS vs. 25.0). ADD1 variant did not remain in the equation. CI – Confidence interval; Statistically significant for p<0.05.

PO 217 Figure

Conclusions: In our study we emphasize the importance of studying genetic variants and non-genetic factors in the appearance of kidney failure/ Microalbuminuria in hypertensive patients, since their early detection can modify the course of its development.

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PO 219. BUDGET IMPACT ANALYSIS AND PUBLIC HEALTH BENEFIT OF THE CNIC POLYPILL STRATEGY FOR THE SECONDARY PREVENTION OF CARDIOVASCULAR AND CEREBROVASCULAR DISEASE IN PORTUGAL

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Introduction: Cardiovascular (CV) disease remains a leading cause of morbidity and mortality in Portugal, representing 29% of all deaths and over 12.000 yearly hospital admissions for myocardial infarction only. A significant proportion of CV disease morbidity and mortality is preventable through the reduction of CV risk factors. A CV polypill that combines aspirin, atorvastatin and ramipril has been available in Portugal since 2014 to serve as baseline treatment and optimise management of patients on secondary CV prevention through a better control of CV risk factors.
Objectives: To assess the economic and health implications of an increased uptake of a polypill strategy (aspirin 100 mg, atorvastatin 20/40 mg, ramipril 2.5/5/10 mg) for the secondary prevention of CV and cerebrovascular events into the current formulary set up in Portugal.
Methods: Budget impact (BI) model based on clinical effectiveness (reduction risk factors; SMART risk equation), pharmacological and event costs, to calculate the cost implications for two treatment strategies for patients on secondary CV prevention: with the polypill or with the individual components, at a 5 year-time horizon (2020-2024). The BI was calculated for a mixed cohort of patients with previous coronary heart disease (CHD, representative of the population in the proACS registry), or ischaemic stroke (IS, representative of the database of the Portuguese Ministry of Health's Central Administration for the Health System) (weighted post-CHD event: 57.9%; post-IS: 42.1%). Systematic reviews, registries, mortality tables and official reports were searched to collect effectiveness, epidemiological and costs (€, 2020) data.
Results: If the CV polypill uptake reaches 8.6% at year 5, 15,454 secondary CV and cerebrovascular disease prevention patients would be treated with the CV polypill, from 3,528 in year 1. 239 CV events and 46 CV related deaths would be prevented by the increased uptake of the CV polypill strategy over 5 years, or 82 CV events and 16 deaths during the 5th year. The increased uptake of the CV polypill strategy would mean a BI of 286,046€, 573,218€, 810,401€, 1,009,241€ and 1,165.241€ in years 1 to 5, respectively. It would represent a total cumulative BI across 5 years for the Portuguese NHS of 3.8 million €. The estimated 5-years BI represents 0.52% of the total expenditure of managing this population during this period.
Conclusions: Under the BI model assumptions, the use of the CV polypill for the secondary prevention of CV and cerebrovascular events is affordable in Portugal and has the potential to improve health outcomes.

PO 220. END-TIDAL CARBON DIOXIDE PARTIAL PRESSURE – A NEW PROGNOSTIC MARKER AFTER ACUTE MYOCARDIAL INFARCTION?

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Introduction: Although several cardiopulmonary exercise testing (CPET) parameters have already proved to predict prognosis, there is increasing interest in finding variables that do not require maximal effort. End-tidal carbon dioxide partial pressure (PETCO2), an indirect indicator of cardiac output, is one of such variables. Studies in heart failure populations already suggest its role as a prognostic factor. However, data concerning other populations are still scarce.
Objectives: To assess the association between exercise PETCO2, cardiac biomarkers and systolic function following acute myocardial infarction (AMI) and to evaluate its potential prognostic role in this population.
Methods: A retrospective single-centre analysis was conducted including patients who underwent symptom-limited CPET early after AMI. We assessed PETCO2 at baseline (PETCO2-B), at anaerobic threshold (PETCO2-AT) and at peak exercise and calculated the difference between PETCO2-AT and PETCO2-B (PETCO2-difference). We analysed their association with B-natriuretic peptide (BNP) and maximal troponin after AMI, with other CPET variables, as well as with global longitudinal strain (GLS) and left ventricular ejection fraction (LVEF) 1 year after AMI.
Results: We included 40 patients with a mean age of 56 years (87.5% male), assessed with CPET a median of 3 months after AMI (80% of which were ST-elevation myocardial infarctions). Average respiratory exchange ratio (RER) was 1.1 with 48% of patients not reaching maximal effort (defined as RER ≥ 1.1). Mean PETCO2-AT was 37 mmHg, with a mean increase from baseline of 6mmHg (PETCO2-difference). There was a significant positive correlation between all the PETCO2 variables measured and BNP values at time of AMI and on follow-up (best correlation for PETCO2-AT with BNP at AMI hospitalization: $r = 0.608$, $p < 0.001$). Maximal troponin was not correlated with PETCO2. Both PETCO2-AT and PETCO2-difference were significantly and negatively correlated with GLS ($r = -0.538$, $p = 0.010$ and $r = -0.629$, $p = 0.002$, respectively) and positively correlated with LVEF 1-year post-AMI ($r = 0.514$, $p = 0.009$ and $r = 0.534$, $p = 0.006$, respectively). Both these variables also showed a significant correlation with peak exercise oxygen uptake (peak VO2) and with the minute ventilation/carbon dioxide production (VE/VCO2) slope (strongest correlation for PETCO2-AT with VE/VCO2 slope: $r = -0.857$, $p < 0.001$).
Conclusions: PETCO2-AT and PETCO2-difference are both correlated with medium-term systolic function after AMI. Their correlation with BNP, peak VO2 and VE/VCO2 slope, established prognostic markers, further suggests their potential prognostic role in this population. Further studies with larger samples are required to confirm the results of this pilot study and assess PETCO2 as a definite predictor of prognosis after AMI and a possible surrogate for peak VO2 in submaximal CPET.

PO 221. ROLE OF TRIGLYCERIDES AND HDL CHOLESTEROL IN RESIDUAL RISK IN CORONARY ARTERY DISEASE PATIENTS WITH LOW LDL CHOLESTEROL

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Introduction: Coronary atherosclerosis is crucial in the development of coronary artery disease (CAD). Low-density lipoprotein cholesterol (LDLc) is the main target as the cornerstone lipid cardiovascular risk factor. Triglycerides (TG) and high-density lipoprotein cholesterol (HDLc) are additional independent factors. Elevated triglycerides (TG) and low HDLc may increase cardiovascular risk in patients with LDLc under the goal.
Objectives: The objective of this study was to determine whether elevated triglycerides (> 150 mg/dl) or low HDLc (< 40 mg/dl) are independently associated with cardiovascular complications in CAD patients with LDLc under 100 mg/dL
Methods: The study involved 1712 coronary patients selected from GENEMACOR study population, with at least one major coronary artery > 75% stenosis by angiography, median age 53.3 ± 7.9 years, 78.7% male.

Cox regression analysis to evaluated MACEs occurrence

Variables	HR (95% CI)	P Value
HDL<40	1.368 (1.065 – 1.758)	0.014

Adjusted for gender, age, Smoking status, hypertension, dyslipidemia, diabetes and triglycerides≥150

PO 221 Figure

Biochemical analysis was determined, and a cohort of 736 patients with LDL-C < 100 mg/dl (mean age 54.4 ± 7.6 and 76.9% men) was considered. Chi-square and T student tests were used to analyze the population´s demographic, laboratory, angiographic, and anthropometric characteristics according to LDLc< 100 mg/dL. Finally, we analysed whether, in this population with LDL within the goal, the existence of high triglycerides and low HDLc was associated with a worse prognosis, after the follow-up period. Adverse cardiovascular events (MACEs) were estimated by Multivariate Cox regression analysis, with a mean follow-up of 3.4 ± 3.5 years.
Results: In our population the patients with HDLc < 40 mg/dl were associated with MACEs in bivariate analysis; 57.4% vs 43.3%; p < 0.0001. After Cox regression analysis adjusted to sex, age of event, smoking, hypertension, diabetes, and dyslipidemia. HDLc< 40 remaining in the equation as an independent predictor of MACEs (HR 1.368; 95%CI 1.065-1.758; p = 0.014). In present study, elevated triglycerides did not associate with MACEs in the follow-up.
Conclusions: Our population with patients under statin therapy with reasonably controlled LDL (< 100mg/dl) the presence of low HDLc was independently associated with an adverse prognosis and higher occurrence of MACE. To date, there are no specific drugs available for the reduction of this maker of residual risk. So, more studies towards drugs affecting HDLc levels may indeed improve prognosis even in patients under statins. It will be important to re-evaluate the influence of low HDL and high triglyceride levels in the prognosis of CAD patients with a more ambitious control of LDL (< 55 mg/dL), according with current guidelines.

PO 222. IDENTIFICATION OF DIASTOLIC DYSFUNCTION ON CARDIOPULMONARY EXERCISE TESTING AND ITS PROGNOSTIC VALUE

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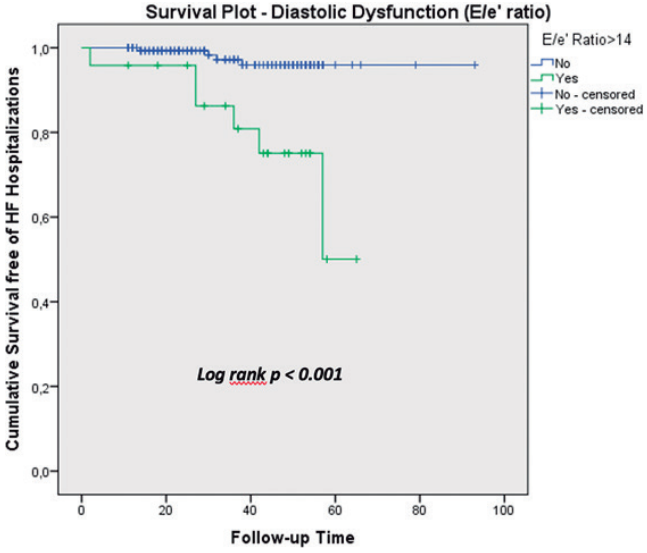
Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: Diastolic dysfunction (DD) is an important pathophysiological mechanism underlying heart failure (HF) with both reduced and preserved ejection fraction. Cardiopulmonary exercise testing (CPET) variables have been extensively studied in systolic dysfunction, but its role in evaluating DD remains to be determined.
Objectives: To determine predictive factors of the DD and evaluate its prognostic effect in the population of the cardiac rehabilitation (CR) appointment who performed CPET.
Methods: Retrospective analysis of CR appointment patients (P) who underwent CEPT between 2014 and 2017 in a single tertiary center. Epidemiological, clinical, laboratory, echo and CEPT-related data were retrieved. We determined predictors of DD (defined as an E/e' ratio> 14) and evaluated its prognostic impact regarding mortality (M), cardiovascular mortality (CV) and mortality/HF hospitalization (MH).
Results: 207 P (83.6% men) were included, with a mean age of 57 years and a mean follow-up time of 36 months. Ps presented a mean LVEF of 53.7% (14-83%) and a mean E/e' ratio of 10.1. The majority (87.9%) was referred for CR with ischemic cardiopathy (AMI or stable or unstable coronary disease), 9.2% with heart failure and 9.2% with valvulopathy. 6.9% P died from any cause, 33.8% had a hospitalization (78.6% from a cardiovascular reason) and 7.3% presented MH. Comparing Ps with DD to Ps without, similar clinical characteristics were found, although the former were older (p = 0.001) and presented both lower basal LVEF (p < 0.001) and peak VO2 (p < 0.001). There was a statistically significant difference between a higher value of E/e' ratio and higher age (r = 0.303, p < 0.001), diabetes (p = 0.021), chronic kidney disease (p = 0.013), left ventricular ejection fraction < 35% (p < 0.001), higher BNP (r = 0.489, p < 0.001), a lower peak VO_2 (r = 0.507, p < 0.001), a higher cardiorespiratory optimal point (r = 0.338, p < 0.001) and a lower circulatory power (r = 0.325, p < 0.001). Of these, independent predictors of higher E/e' ratio were a lower peak VO_2 (p = 0.012) and a LVEF < 35% (p < 0.001). The presence of DD (E/e' ratio> 14) was a predictor of M (HR = 8.24, IC [1.38-47.4], p = 0.021), CV (HR = 16.36, IC [1.69-157.57], p = 0.016) and MH (HR = 7.93, IC [2.23-28.19], p = 0.001). Ps with DD presented a lower 30 months survival than Ps with an E/e' ratio < 14 (86.3%vs100%, log rank p = 0.006).



Conclusions: An E/e' ratio > 14 was associated with a higher rate of events in our population. Both peak VO_2 and a LVEF < 35% are independent factors for the presence of DD.

PO 223. ESSENTIAL HYPERTENSION AND ATP2B1 GENE ARE ASSOCIATED WITH EARLY ARTERIAL STIFFNESS

Ana Célia Sousa, Carolina Aguiar, Carolina Barros, Helena Luís, Mariana Gomes, Eva Henriques, Sónia Freitas, Mariana Rodrigues, Sofia Borges, Carolina Freitas, Ana Isabel Freitas, Graça Guerra, Ilídio Ornelas, Roberto Palma dos Reis, Maria Isabel Mendonça

Unidade de Investigação, Hospital Dr. Nélio Mendonça.

Introduction: Arterial distensibility is associated with an increased risk of cardiovascular disease; particularly early vascular stiffness is a determinant of morbidity and cardiovascular death. The carotid-femoral pulse wave velocity (PWV) is used as an index of arterial distensibility. Essential Hypertension (EH) is the main risk factor for increased vascular stiffness and, consequently, PWV. Some studies have associated the ATP2B1 A/G rs2681472 polymorphism to higher vascular remodeling.
Objectives: Evaluate if the Essential Hypertension and ATP2B1 A/G polymorphism are associated with increased PWV in a population of individuals under 50 years.

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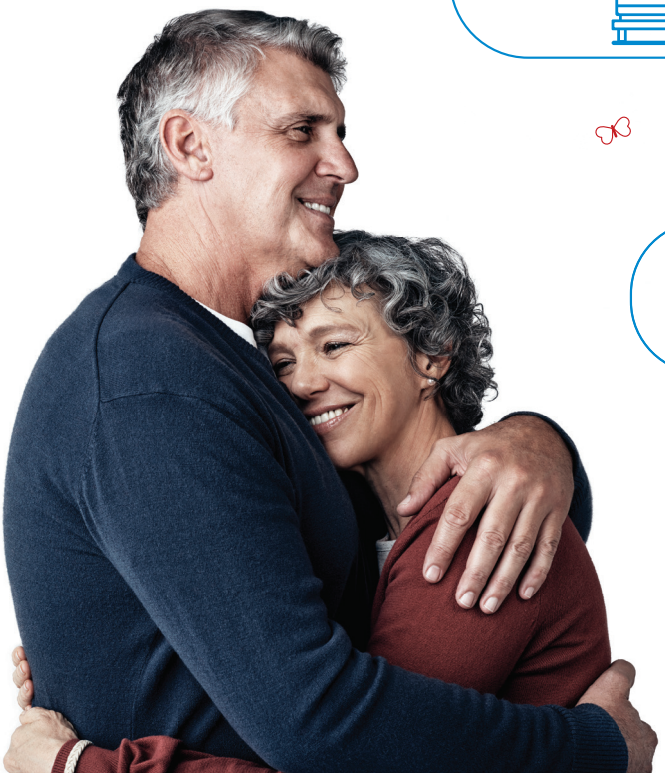

Nome do medicamento, composição e Forma farmacêutica*: Lipocomb® 10 mg/10 mg cápsulas contém 10 mg de rosuvastatina (sob a forma de zinco) e 10 mg de ezetimiba; Lipocomb® 20 mg/10 mg cápsulas contém 20 mg de rosuvastatina (sob a forma de zinco) e 10 mg de ezetimiba. | **Indicações terapêuticas*:** Lipocomb® está indicado como adjuvante da dieta para o tratamento de hipercolesterolemia primária como terapêutica de substituição em doentes adultos adequadamente controlados com as substâncias individuais administradas concomitantemente na mesma dose que na combinação de dose fixa, mas enquanto medicamentos separados. | **Posologia E Modo De Administração*:** Uma cápsula da dosagem indicada, com ou sem alimentos, todos os dias à mesma hora, engolida inteira com um copo de água. Lipocomb® não é adequado para terapêutica inicial. A iniciação do tratamento ou o ajuste posológico, se necessário, devem ser efetuados através da administração dos componentes em monoterapia. Lipocomb® 10 mg/10 mg e 20 mg/10 mg não são adequados para o tratamento de doentes que requeiram uma dose de 40 mg de rosuvastatina. Lipocomb® deve ser administrado ≥2 horas antes ou ≥4 horas após a administração de um sequestrante do ácido biliar. *População pediátrica:* A utilização não é recomendada. *Doentes com insuficiência renal:* Não é necessário ajuste posológico em doentes com compromisso renal ligeiro a moderado. *Doentes com compromisso hepático:* Não é necessário qualquer ajuste posológico em doentes com pontuação 5 a 6 na escala de ChildPugh. Não recomendado em doentes com pontuação ≥7 na escala de ChildPugh. *Doentes idosos (>70 anos), doentes asiáticos, doentes com compromisso renal moderado (ClCr <60 ml/min), doentes com predisposição para a miopatia:* Recomenda-se uma dose inicial de 5 mg de rosuvastatina. A iniciação do tratamento ou ajuste posológico deve ser apenas efetuada através da administração dos componentes em monoterapia e, após a determinação da posologia apropriada, é possível considerar a mudança para a Lipocomb® na dosagem apropriada. **Contraindicações*:** Hipersensibilidade às substâncias ativas ou a qualquer um dos excipientes; Doença hepática ativa incluindo elevações persistentes e inexplicáveis das transaminases séricas e qualquer elevação das transaminases séricas excedendo 3 vezes o limite superior dos valores normais (LSN); Durante a gravidez e amamentação e em mulheres com potencial para engravidar que não adotam medidas contracetivas apropriadas; Doentes com compromisso renal grave (*ClCr* <30 ml/min); Doentes com miopatia; Doentes tratados concomitantemente com ciclosporina. | **Advertências e precauções especiais de utilização*:** Ácido *fusídico:* Lipocomb® não pode ser coadministrado com formulações sistémicas de ácido fusídico ou no espaço de 7 dias após ter parado o tratamento com ácido fusídico. *Medição da creatina quinase:* Se os níveis basais de CK estiverem significativamente elevados (>5xLSN), deverão ser reavaliados após 5 - 7 dias. Se a repetição do teste confirmar um valor basal de CK >5xLSN, o tratamento não deverá ser iniciado. *Antes do tratamento:* Lipocomb®, tal como outros inibidores da redutase da HMGCoA, deverá ser prescrito com precaução em doentes com fatores predisponentes para miopatia/rabdomiólise (p. ex. compromisso renal; hipotiroidismo; antecedentes pessoais ou familiares de alterações musculares hereditárias; antecedentes de toxicidade muscular com outro inibidor da redutase da HMGCoA ou fibrato; abuso de álcool; idade >70 anos; situações em que possa ocorrer um aumento dos níveis plasmáticos; utilização concomitante de fibratos). Nestes doentes, deverá ser avaliado o risco do tratamento relativamente aos possíveis benefícios, sendo recomendada uma monitorização clínica. Se os níveis basais de creatina quinase (CK) forem significativamente elevados (> 5xLSN), o tratamento não deverá ser iniciado. *Durante o tratamento:* Os doentes devem ser aconselhados a notificar imediatamente qualquer dor muscular, astenia ou cãibras inexplicáveis, particularmente se associadas a malestar ou febre. A terapêutica deve ser interrompida se os níveis de CK estiverem significativamente elevados (> 5xLSN) ou se os sintomas musculares forem graves e causarem desconforto diário. Lipocomb® não deve ser utilizado em qualquer doente com uma situação aguda grave, sugestiva de miopatia ou de predisposição para o desenvolvimento de falência renal secundária a rabdomiólise (p. ex. sépsis, hipotensão, grande cirurgia, trauma, disfunções metabólicas, endócrinas e eletrolíticas graves ou convulsões não controladas). *Efeitos hepáticos:* Recomenda se que sejam realizados testes da função hepática 3 meses após o início do tratamento com rosuvastatina. Se o nível das transaminases séricas exceder 3 vezes o limite superior da normalidade, a rosuvastatina deve ser interrompida ou a dose deve ser reduzida. *Raça:* Estudos de farmacocinética da rosuvastatina revelaram um aumento da exposição em indivíduos Asiáticos. *Doença pulmonar intersticial:* Foram notificados casos excecionais de doença pulmonar intersticial com algumas estatinas, especialmente com tratamentos de longa duração. Os sintomas observados incluem dispneia, tosse não produtiva e deterioração do estado de saúde em geral (fadiga, perda de peso e febre). Se houver suspeita de desenvolvimento de doença pulmonar intersticial, a terapêutica deve ser interrompida. *Diabetes mellitus:* Os doentes em risco (glicemia em jejum entre 5,6 a 6,9 mmol/l, IMC >30 kg/m², triglicéridos aumentados, hipertensão) devem ser monitorizados quer clínica quer bioquimicamente de acordo com as normas de orientação terapêutica nacionais. *Anticoagulantes:* Se Lipocomb® for adicionado à varfarina, a outro anticoagulante cumarínico ou à fluindiona, o INR deve ser monitorizado de forma apropriada. *Doença hepática e álcool:* Lipocomb® deve ser utilizado com precaução em doentes que ingerem quantidades excessivas de álcool. | **Interações medicamentosas*** *Contraindicações:* ciclosporina. *Associações não recomendadas:* inibidores da protease; inibidores das proteínas transportadoras (incluindo o transportador de captação hepático OATP1B1 e o transportador de efluxo BCRP), gemfibrozil e outros medicamentos hipolipemiantes, ácido fusídico. *Precauções*: antiácidos, eritromicina; antagonistas da Vitamina K; contracetivo oral/terapêutica hormonal de substituição, colestiramina. *Medicamentos que requerem ajustes na dose de rosuvastatina:* ciclosporina, regorafenib, atazanavir/ritonavir, simeprivir, velpatasvir, ombitasvir/paritaprevir/ ritonavir/dasabuvir, grazoprevir/elbasvir, glecaprevir/pibrentasvir, lopinavir/ritonavir, clopidogrel, gemfibrozil, eltrombopag, darunavir/ritonavir, tipranavir/ritonavir, dronedarona, itraconazol, fosamprenavir/ritonavir, aleglitazar, silimarina, fenofibrato, rifampicina, cetoconazol, fluconazol, eritromicina, baicalina. | **Fertilidade, gravidez e aleitamento***: Lipocomb® está contraindicado na gravidez e amamentação. As mulheres com potencial para engravidar devem utilizar métodos contracetivos apropriados. | **Efeitos sobre a capacidade de conduzir e utilizar máquinas*:** Efeitos nulos ou desprezáveis. Contudo, é necessário ter em conta que podem ocorrer tonturas durante o tratamento. | **Efeitos indesejáveis*:** Frequentes: diabetes mellitus, cefaleias, tonturas, obstipação, náuseas, dor abdominal, diarreia, flatulência, mialgia, astenia, fadiga, aumento de ALT e/ou AST. Pouco frequentes: apetite diminuído, parestesia, afrontamentos, hipertensão, tosse, dispepsia, afeção de refluxo gastroesofágico, boca seca, gastrite, prurido, erupção cutânea, urticária, artralgia, espasmos musculares, dor cervical, dorsalgia, fraqueza muscular, dores nas extremidades, dor torácica, dor, edema periférico, aumento da CPK no sangue, aumento da gama glutamiltransferase, teste anormal da função hepática. Raros: trombocitopenia, reações de hipersensibilidade incluindo angiedema, pancreatite, transaminases hepáticas aumentadas, miopatia (incluindo miosite), rabdomiólise, síndrome tipo lúpus, rutura muscular. Muito raros: polineuropatia, perda de memória, icterícia, hepatite, hematúria, ginecomastia. Frequência desconhecida: hipersensibilidade (incluindo erupção cutânea, urticária, anafilaxia e angioedema), depressão, neuropatia periférica, alterações do sono (incluindo insónia e pesadelos), tonturas, parestesia, tosse, dispneia, colelitíase, colecistite, síndrome de Stevens Johnson, eritema multiforme, miopatia necrosante imunomediada, afeções dos tendões, por vezes complicadas devido a rutura, edema. | **Sobredosagem***: Devem ser aplicadas medidas sintomáticas e de suporte. Os níveis de CK e da função hepática devem ser monitorizados. | **Propriedades farmacológicas***: A rosuvastatina é um inibidor seletivo e competitivo da redutase da HMGCoA, a enzima limitante da taxa de conversão da 3hidroxi3metilglutaril coenzima A em mevalonato, um precursor do colesterol. A ezetimiba é uma nova classe de compostos hipolipemiantes que inibem seletivamente a absorção intestinal de colesterol e esteróis vegetais relacionados. | **Apresentações Comercializadas***: Embalagens de 10 (apenas para o Lipocomb® 10 mg/10 mg cápsulas) e de 30 cápsulas | **Titular da AIM**: EGIS Pharmaceuticals PLC, 1106 Budapest, Keresztúri út 30 38, Hungria. **Para mais informações contatar o representante do titular da AIM**: Servier Portugal, Lda. Av. António Augusto de Aguiar 128, 1069-133 Lisboa. - Telefone: 213122000. **Regime de comparticipação:** Comparticipado pelo escalão C:RG=37%; RE=52%. Lipocomb® é um **MSRM**. RCM aprovado em 04.2020. IECRCM 18.09.2020. *Para uma informação completa por favor leia o Resumo das Características do Medicamento.

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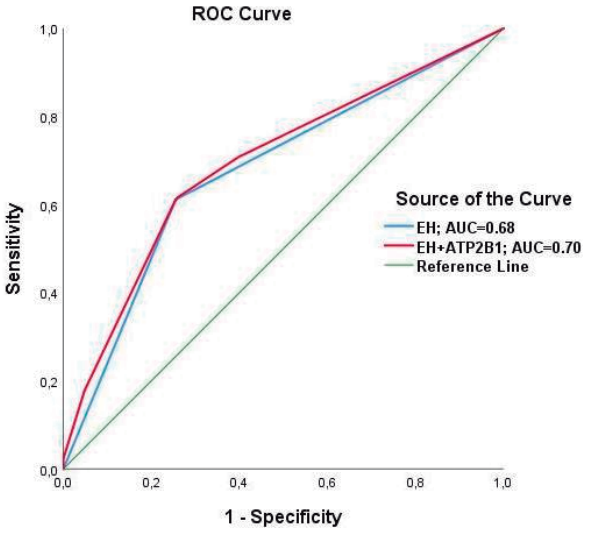
Methods: In a sample of 715 people aged < 50 years, PWV was determined by the Complior method. PWV values were divided into quartiles and compared between the first (< 7.1 m/s) and the fourth quartiles (> 8.6 m/s) in relation to the frequency of EH and of the ATP2B1 A/G polymorphism. Two logistic regressions were performed: the first, with the variable EH and the second, with the genetic polymorphism ATP2B1 A/G added to EH. Subsequently, through a ROC curve, we evaluated the predictive power of high PWV values for EH and calculated its AUC. Then, a new ROC curve was completed with EH + ATP2B1 A/G and calculated its AUC.
Results: EH was significantly associated with higher PWV values (p < 0.0001). The ATP2B1 A/G polymorphism was also associated with higher PWV values, in the additive and multiplicative models (OR = 1.63, 95%CI 1.04-2.56; p = 0.033 and OR = 1.64, 95%CI 1.05-2.56; p = 0.030, respectively). The predictive power of high PWV conferred by EH was (AUC) 0.68, and when ATP2B1 A/G was added to EH the predictive power (AUC) was 0.70.



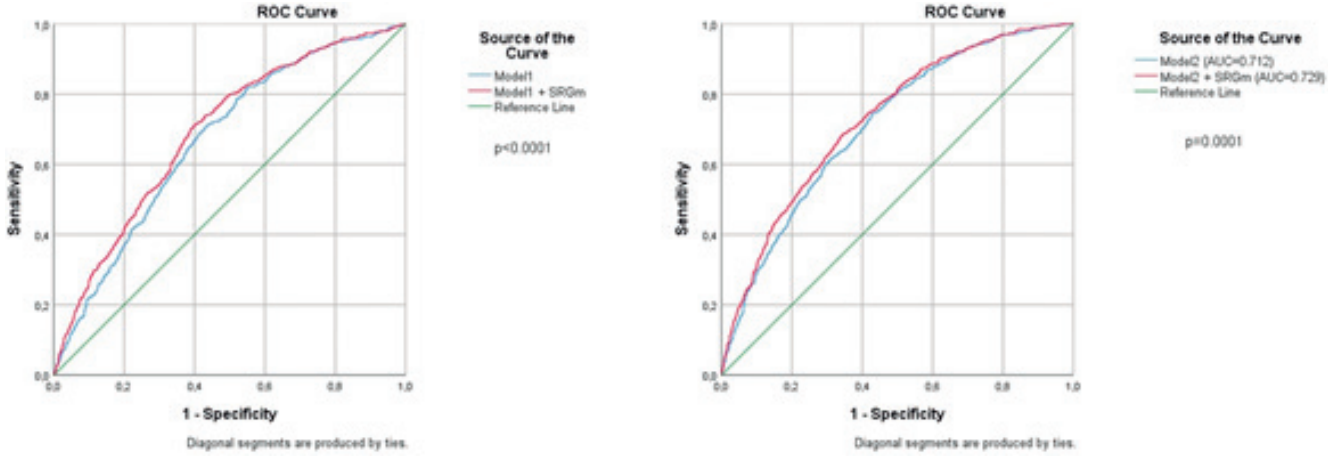
Conclusions: Our study shows that ATP2B1 polymorphism and EH are significantly associated with greater arterial stiffness in individuals less than 50 years. It has also been proven the increase of the predictive capacity of PWV when adding the genetic variant ATP2B1 A/G to EH. Hypertensive individuals carrying this polymorphism have a higher risk of developing early arterial stiffness. Primary prevention measures must be instituted in these individuals as soon as possible to avoid progression to arterial stiffness and worsening of vascular remodeling.

PO 224. ASSESSING THE CLINICAL UTILITY OF A GENETIC RISK SCORE CONSTRUCTED USING 10 SUSCEPTIBILITY SNPS ASSOCIATED WITH TYPE 2 DIABETES IN A SOUTHERN EUROPEAN POPULATION

M. Raquel Santos[1], Isabel Mendonça[2], Margarida Temtem[2], Adriano Sousa[2], Flávio Mendonça[2], Ana Célia Sousa[2], Sónia Freitas[2], Eva Henriques[2], Mariana Rodrigues[2], Sofia Borges[2], Graça Guerra[2], António Drumond[1], Roberto Palma dos Reis[3]

[1]Hospital Dr. Nélio Mendonça. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]CEDOC, NOVA Medical School|Faculdade de Ciências Médicas da Universidade NOVA de Lisboa.

Introduction: The development of personalized susceptibility profiles based on genetic information to aid prediction, early detection and prevention of type 2 diabetes (T2D) with potential clinical application, begins to awaken interest in the scientific community. However, its clinical translation is controversial.
Objectives: Evaluate the clinical utility of a genetic risk score (GRS) created with the GWAS-derived genetic variants associated to T2D to predict and discriminate the susceptibility to Type 2 diabetes, in a Southern European population with and without T2D.
Methods and results: We studied through a case-control with 3,139 subjects (772 with T2D and 2,367 without) the usefulness of implementing a GRS in clinical practice. We constructed a multiplicative GRS (mGRS) calculated using 10 SNPs of genetic loci robustly associated to T2D (HNF4A rs1884613, IGF2BP2 rs4402960, PPARG rs1801282, TCF7L2 rs7903146, SLC30A8 rs1326634, MC4R rs17782313, ADIPOQ rs266729, FTO rs8050136, TAS2R50 rs1376251 and APO E rs7412 and rs429358), to evaluate the prediction and discrimination of T2D. Two logistic regression models were performed the first with age, sex and BMI. The second with these three risk factors plus hypertension, LDL> 130 mg/dl and physical inactivity. Logistic regression models, receiver operating characteristic analyses (ROC curve) were used. Each model was analysed individually and added with mGRS to calculate the area under the ROC curve (AUC), which may be considered a global estimate of each model´s predictive power. The inclusion of GRS in the first model increased the discriminative power of T2D (AUC = 0.669 to 0.692; p < 0.0001. In the second model, the increase was AUC = 0.712 to 0.729; p < 0.0001.
Conclusions: Adding genomic information to traditional models improves the ability to predict and discriminate type 2 Diabetes slightly, compared to traditional models alone. Nevertheless, this increase is not sufficiently robust for translation in clinical practice. However, clinicians should be conscious that T2D genetic research is experiencing a dramatic revolution and stay optimistic that these innovative studies translate into improved care for diabetic patients.



PO 224 Figure

PO 225. THE IMPACT OF COVID-19 ERA IN PHASE III CARDIAC REHABILITATION PROGRAMS: HOW WAS BODY COMPOSITION AFFECTED IN TRAINED CARDIOVASCULAR PATIENTS?

Madalena Lemos Pires[1], Mariana Borges[1], Rita Pinto[1], Gonçalo de Sá[2], Inês Ricardo[1], Nelson Cunha[1], Pedro Alves da Silva[1], Mariana Liñan Pinto[3], Catarina Sousa Guerreiro[3], Fausto J. Pinto[1], Ana Abreu[1], Helena Santa-Clara[4]

[1]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa. [2]Faculdade de Motricidade Humana, Universidade de Lisboa, Cruz Quebrada. [3]Laboratório de Nutrição, Faculdade de Medicina, Universidade de Lisboa, Lisboa. [4]Laboratório de Exercício e Saúde, CIPER, Faculdade de Motricidade Humana, Universidade de Lisboa, Cruz Quebrada.

Introduction: It has been well established that multidisciplinary cardiovascular rehabilitation (CR) programs promote changes in body composition in patients with cardiovascular disease (CVD). With COVID-19, most centre-based CR programs had to be suspended and readjusted to a home-based model where multidisciplinary interventions (e.g., supervising exercise training intensities and eating habits) were more difficult to be performed. The impact that COVID-19 era had on body composition in trained CVD patients who were attending long-term CR programs has yet to be discussed.
Objectives: To analyse the body composition of previously trained CVD patients who had their phase III centre-based CR program suspended due to COVID-19 pandemic and compare it with previous assessments.
Methods: 87 CVD patients (mean age 62.9 ± 9.1, 82.8% male) were attending 3x/week a phase III centre-based CR program and were evaluated annually. After 7 months of suspension (due to COVID-19), 57.5% (n = 50) patients returned from a CR home-based model to the face-to-face CR program. Despite all constraints caused by COVID-19, body composition of 36 participants (mean age 64.4 ± 7.9, 88.9% male) was assessed. We compared this assessment with previous years and established three assessment time points: M1) one year before COVID-19 (2018); M2) last assessment before COVID-19 (2019); M3) the assessment 7 months after CR program suspension (last trimester of 2020). Height and body weight were measured and used to calculate body mass index (BMI). Dual energy x-ray absorptiometry was used to measure whole-body fat and appendicular lean mass (ALM). Paired sample t-tests were used for data analysis.
Results: From M1 to M2, no differences were found in whole-body fat and ALM percentage but, from M2 to M3, there was a significant increase in the percentage of whole-body fat (M2: 31.60 ± 6.75% vs M3: 32.74 ± 6.92%, p = 0.018) and a significant decrease in the percentage of ALM (M2: 28.80 ± 3.50% vs M3: 28.23 ± 3.63%, p = 0.004). The mean BMI of the 36 patients in M3 was 28.34 ± 3.84 kg/m^2 (44.44% overweight, 33.33% obese) and no changes were found between moments.
Conclusions: After the CR centre-based suspension due to COVID-19, we observed an increase of whole-body fat and a decrease in ALM in previously trained CVD patients. These results should emphasize the need to keep developing and improving digital home-based CR models, with a multidisciplinary approach, when face-to-face models are not available or possible to be implemented. More efforts should be made to enhance digital alternatives including supervision and remote control of vital signs, exercise intensities and eating habits, to guarantee safety and patients adherence.

PO 226. THE IMPACT OF COVID-19 ERA IN CARDIAC REHABILITATION PROGRAMS: WERE CARDIOVASCULAR PATIENTS ABLE TO REMAIN PHYSICALLY ACTIVE?

Mariana Borges[1], Madalena Lemos Pires[1], Rita Pinto[1], Inês Ricardo[1], Nelson Cunha[1], Pedro Alves da Silva[1], Mariana Liñan Pinto[2], Catarina Sousa Guerreiro[2], Fausto J. Pinto[1], Helena Santa-Clara[3], Ana Abreu[1]

[1]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa. [2]Laboratório de Nutrição, Faculdade de Medicina, Universidade de Lisboa, Lisboa. [3]Laboratório de Exercício e Saúde, CIPER, Faculdade de Motricidade Humana, Universidade de Lisboa, Cruz Quebrada.

Introduction: Cardiovascular rehabilitation (CR) was one of the areas negatively affected by COVID-19. A high number of cardiovascular disease (CVD) patients had their centre-based program suspended. Physical activity (PA) recommendations for CVD patients are well established and its benefits largely documented. However, few studies have objectively measured the PA of these patients throughout the years and specifically during COVID-19 era.
Objectives: To objectively measure PA and sedentary time (ST) during COVID-19 era in comparison with the previous 2 years in CVD patients who were attending a phase III centre-based CR program.
Methods: 87 CVD patients were attending a long-term CR program. From these, 78.2% have been on the program for at least 1 year. Annually, PA and ST were objectively assessed. After the CR centre-based program suspension due to COVID-19, a CR home-based digital model was created to avoid losing previous acquired benefits. After 7 months of suspension, 57.5% (n = 50) patients returned to the face-to-face CR centre. We completed the assessment of 37 patients (64.8 ± 8.1 years, 89.2% male) and compared it as follows: M1) two assessments before COVID-19; M2) last assessment before COVID-19; M3) 7 months after CR program suspension (last trimester of 2020). Each wore an ActiGraph accelerometer for a week to assess daily and weekly minutes of light PA, moderate-to-vigorous PA (MVPA) and ST. We used repeated-measures ANOVA and Wilcoxon signed rank test as a non parametric alternative.
Results: Intention-to-treat analysis showed that in M3 patients decreased average daily time spent in MVPA when compared with M2 (M3: 37.12 ± 20.20 min/day vs M2: 45.01 ± 19.12 min/day, p = 0.002), no changes were found in MVPA between M1 and M2. Average daily time spent in light PA improved significantly from M1 to M2 (M1: 154.81 ± 43.68 min/day vs M2: 169.17 ± 39.15 min/day, p = 0.042) but did not change from M2 to M3. Despite this, in M3, 81.08% of the patients still met the recommendations for MVPA and 35.14% did more than 300 min of MVPA/week. No changes were found in ST.
Conclusions: Despite a significant decrease on the amount of MVPA during the COVID-19 era, most CVD patients were able to meet PA recommendations throughout the last years. These findings suggest that CVD patients who attend supervised long-term CR programs might be aware of the importance of reaching PA guidelines. Reducing ST by replacing it by PA of any intensity could be an important and reachable target for long-term CR programs.

PO 227. ANTICIPATING RECURRENT ISCHEMIC EVENTS AFTER AN ACUTE CORONARY SYNDROME: VALIDATION AND APPLICATION OF THE SMART-REACH SCORE

Daniel A. Gomes, João Presume, Pedro Lopes, Francisco Albuquerque, Mariana Sousa Paiva, Rita Reis Santos, Carlos Aguiar, Marisa Trabulo, Jorge Ferreira, Miguel Mendes

Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: The SMART-REACH score (SRS) was developed to predict the risk of major adverse cardiovascular events in ambulatory patients with established cardiovascular disease, although it has not been extensively validated. Those at higher risk of recurrent ischemic events may benefit from novel, more intensive treatment options, and earlier identification of these patients can potentially improve outcomes. Accordingly, we aimed to validate the SRS and evaluate its performance in a population recently admitted with acute coronary syndrome.
Methods: In this single-centre retrospective cohort, we included 320 patients aged 45 to 80 years, who were discharged following admission for an acute coronary syndrome between 2016 and 2018. To calculate the SRS for each patient, we considered clinical data on admission (age, gender, smoking, diabetes, prior history of vascular disease, heart failure or atrial fibrillation), lipid values obtained within the first 24 hours of hospitalization, serum creatinine level at baseline and discharge medication. The outcome of interest was defined as stroke, myocardial infarction or cardiovascular death (MACE) at two years of follow-up. SRS was assessed for discrimination and calibration.
Results: Mean age was 63 ± 9 years, and 240 (75%) were male. There was high prevalence of cardiovascular risk factors: 71% had arterial hypertension, 32% had diabetes mellitus, 42% were active smokers and 25% had previously established cardiovascular disease. The outcome of interest was observed in 38 patients (22 cardiovascular deaths, 6 strokes and 14 myocardial infarctions). SRS showed good discrimination of the estimated MACE risk

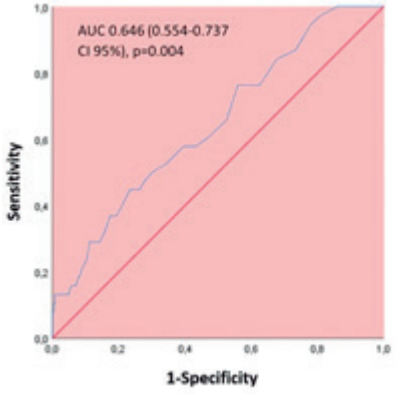


Figure 1 - ROC curve for SMART-REACH score

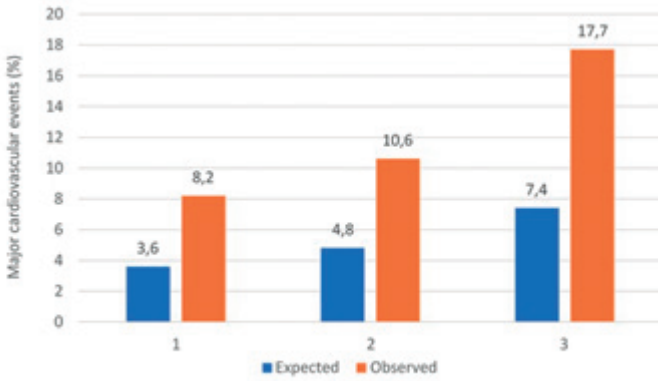


Figure 2 - Expected versus observed MACE (population divided in tertiles)

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with overall C-statistic of 0.646 (95%CI 0.554-0.737, p = 0.004) (Figure 1) and calibration (p-value for the goodness-of-fit test of 0.544). The global estimated risk of MACE at 2-years was 4.8% (3.8%-6.8%). The expected/observed ratio was 0.56 for the occurrence MACE (Figure 2).
Conclusions: Over the first two years after discharge from an acute coronary syndrome, one in every 8 patients developed a potentially fatal recurrent ischemic event. The SRS performed reasonably well in discriminating those at highest risk of MACE, suggesting that this score may help select patients at discharge for *ad initium* more intensive pharmacological therapy.

PO 228. THE IMPACT OF CHRONOTROPIC INCOMPETENCE MARKERS IN A POPULATION UNDERGOING CARDIAC REHABILITATION

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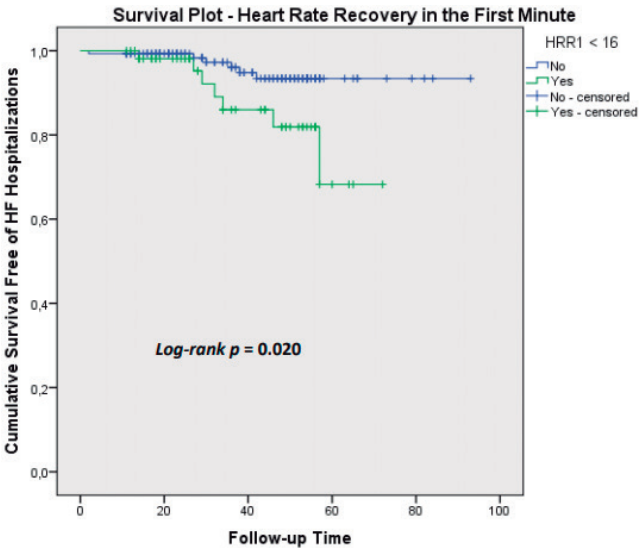
Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: During Cardiopulmonary exercise testing (CEPT), a low heart rate recovery at one minute (HRR1) and a low heart rate reserve (HRr) have been assumed to be index of autonomic imbalance and chronotropic incompetence, which are associated with a poor prognosis in several forms of heart disease. Several studies and the AHA/EACPR CPET guidelines showed a correlation between a low HRR1 and a worse outcome in several forms of heart disease.
Objectives: To characterize the population of the cardiac rehabilitation (CR) appointment that performed CEPT and to evaluate basal HRR1 and HRr as predictors of events.
Methods: Retrospective analysis of CR patients (P) who performed CEPT between 2014 and 2017 in a single tertiary center. Epidemiological, clinical, laboratory, echo and CEPT-related data were retrieved. We evaluated which variables were associated to a low HRR1/HRr and compared the composite endpoint of mortality/hospitalization due to heart failure (MH) according to HRR1< 16 and HRr< 62 beats (both calculated cut-offs for our population).
Results: 207 P (83.6% men) were included, with a mean age of 57 years and a mean follow-up time of 36 months. Ps presented a mean LVEF of 53.7% (14-83%). The majority (87.9%) was referred for CR with ischemic cardiopathy (AMI or stable or unstable coronary disease), 9.2% with heart failure and 9.2% with valvulopathy. Mean HRR1 was 23.7 beats and mean HRr was 61.8 beats. 6.9% P died from any cause, 33.8% had an hospitalization (78.6% from a cardiovascular reason) and 7.3% presented MH. A HRR< 16 was associated with an older age (61.2 vs 55.8, p = 0.017), diabetes (41.2% vs 23.3%, p = 0.014), chronic kidney disease (61.5% vs 32.4%, p = 0.042), previous myocardial infarction (40.0% vs 24.1%, p = 0.043) and LVEF< 35% (18.5% vs 4.9%, p = 0.008). It also correlated with a higher LDL value pre-CR (170 vs 111, p = 0.034), with a peak VO_2< 14 ml/min/kg (58.1% vs 22.5%, p < 0.001) and lower circulatory and ventilatory power (2,967.5 vs 3,992.2, p = 0.001 and 4.9 vs 5.9, p = 0.019, respectively). Values of HRR< 16 were good predictors of MH (HR = 3.38, IC [1.14-10.07], p = 0.029). However, HRR< 16 did not correlate with all cause hospitalization or need for cardiac device. A value of HRr< 62 was associated to an age > 65 years (49.9 vs 65.2, p < 0.001), a LVEF< 35% (63.2% vs 42.7%, p = 0.009), a higher VE/VCO_2 slope (CC = 0.289, p < 0.001) and a higher cardiorespiratory optimal point (r = 0.395, p < 0.001). Values of HRr< 62 were good predictors of MH (HR = 7.31, IC [1.62-33.07], p = 0.010 and AUC = 0.703).



Conclusions: Ps with HRR1 < 16 or HR < 62 presented a worse prognosis regarding the composite endpoint of MH. Both are easily obtained auxiliary parameters that reflect altered autonomic tone.

PO 229. PROGNOSTIC POWER OF PEAK OXYGEN PULSE IN A POPULATION UNDERGOING CARDIAC REHABILITATION

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Centro Hospitalar de Lisboa Central, EPE/Hospital de Santa Marta.

Introduction: The peak O2 pulse (OP) provides an estimate of left ventricular (LV) stroke-volume changes during exercise. It has proven to be an independent predictor of mortality in patients with heart disease and a predictor of myocardial ischemia.
Objectives: To characterize the population of the cardiac rehabilitation (CR) appointment that performed cardiopulmonary exercise test (CEPT), evaluate OP as a predictor of events and determine the best cut off for our population.

Methods: Retrospective analysis of CR appointment patients (P) who performed CEPT between 2014 and 2017 in a single tertiary center. Epidemiological, clinical, laboratory, echo and CEPT-related data were retrieved. We then determined predictors of OP and established the appropriate Cut Off for our population and compared the occurrence of events - composite endpoints of mortality/hospitalization due to heart failure (MH), mortality/hospitalization due to cardiovascular cause(MC) and mortality/hospitalization due to heart failure/need for revascularization (MHR)- according to it.
Results: 207 P (83.6% men) were included, with a mean age of 57 years and a mean follow-up time of 36 months. 96.6% of P had a cardiovascular disease or risk factors and 99% were medicated, with a mean LVEF of 53.7% (14-83%). The majority (87.9%) was referred for CR with ischemic cardiopathy (AMI or stable or unstable coronary disease), 9.2% with heart failure and 9.2% with valvulopathy. 6.9% P died from any cause, 33.8% had an hospitalization (78.6% from a cardiovascular reason) and 7.3% presented MH. Mean OP was 13.3 ± 4.4 mL/beat. A lower OP was associated with an older age (CC = 0.399, p < 0.001), female sex (p < 0.001), diabetes (p = 0.007), previous arrhythmias (p = 0.015), chronic kidney disease (p = 0.018), peripheral artery disease (p = 0.040), a lower basal LVEF (CC.0325, p < 0.001). It also correlated with a lower peakVO_2 (CC = 0.732, p < 0.001), a lower cardiorespiratory optimal point (CC = 0.514, p < 0.001), a lower circulatory power (CC = 0.502, < 0.001) and a higher VE/VCO_2 slope (CC = 0.358, p = 0.001). Values of OP below a cut-off of 11.5 predict the composite endpoint of MH (HR 7.31, IC [2.01-26.62], p = 0.003), MC (HR 2.03, IC [1.21-3.38], p = 0.007) and MHR (HR 1.97, IC [1.04-3.74], p = 0.039). Ps with OP values below present a 40 months survival of 76.2% comparing to 97.3% if the peak OP is above the aforementioned cut-off (log-rank p < 0.001). CR lead to a statistically significant improvement in peak OP (from 14.2 to 23.5 mL/beat, p < 0.001), however it wasn't associated to a lower rate of coronary events or revascularization.
Conclusions: In our analysis, peak OP was improved after completion of CR program and a value below 11.5 mL/beat was a predictor of cardiac events in our population.

PO 230. EPICARDIAL ADIPOSE TISSUE VOLUME IMPROVES CARDIOVASCULAR RISK RECLASSIFICATION: THE FRAMINGHAM RISK SCORE EXAMPLE

João Adriano Sousa, Isabel Mendonça, Marina Santos, Margarida Temtem, Flávio Mendonça, Ana Célia Sousa, Mariana Rodrigues, Eva Henriques, Sónia Freitas, Sofia Borges, Graça Guerra, António Drumond, Roberto Palma dos Reis

Hospital Central do Funchal.

Introduction: Epicardial adipose tissue (EAT) volume can be noninvasively detected by CT and has been suggested to predict major adverse cardiovascular events (MACE). Framingham Risk Score is one of a number of scoring systems used to determine an individual's chances of developing cardiovascular disease, hence identifying who is most likely to benefit from prevention.
Objectives: The purpose of this study was to determine net reclassification improvement (NRI) and improved risk prediction based on EAT volume, in comparison to a traditionally known cardiovascular risk score, such as the Framingham.
Methods: 895 asymptomatic volunteers were prospectively enrolled in a single Portuguese center (mean age 51.9 ± 7.7, 78.5% male) and underwent a median follow-up time of 3.7 years (IQR 5.0). EAT volume was measured by Cardiac Computed Tomography (CCT) using a modified simplified method. For NRI assessment, EAT volume as a continuous variable was added to the Framingham Risk Score.
Results: After 3.7 median years of follow-up, 27 patients developed a MACE. Using NRI, the net proportion of events (netNRIe) that assigned a higher risk was 33.3% (better reclassified), and the net ratio of non-events (netNRIne) was 24.7%, resulting in a net reclassification index (netNRI) of 58.0%. When the new marker was included in the model, 58.0% of patients were better reclassified. In our work, a total of 33.3% of patients who suffered events (n = 27) were correctly reclassified and assigned a higher risk.
Conclusions: EAT volume results in a high reclassification rate in an asymptomatic, low-risk population, demonstrating the benefit of this marker beyond traditional risk assessment models. Our study supports its application, especially in carefully selected individuals.

PO 231. CARDIOPULMONARY EXERCISE TESTING IN ASYMPTOMATIC AORTIC STENOSIS

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Centro Hospitalar de Lisboa Ocidental, EPE/Hospital de Santa Cruz.

Introduction: Exercise test is recommended for risk stratification of asymptomatic patients with severe aortic stenosis (AS). Cardiopulmonary Exercise Testing (CPET) may improve the accuracy of exercise capacity quantification, yet there is no defined role of CPET to evaluate asymptomatic AS. The aim of this study was to assess the feasibility, safety and additional information obtained by CPET in patients with asymptomatic severe AS.
Methods: This is a single-center retrospective study of patients with asymptomatic AS who underwent CPET between December 2016 and November 2020 in our center. AS severity was defined as: aortic valve area (AVA) < 1 cm^2 or mean transvalvular pressure gradient (GPm) > 40 mmHg. All patients underwent a treadmill CPET using an exercise protocol with

Baseline Characteristics (n=18)	
Age, y	82 ± 5
Male	10 (56%)
Female	8 (44%)
Body Mass Index, Kg/cm2	27,8 ± 4,5
Medical history	
Diabetes Mellitus	3 (17%)
Hypertension	16 (89%)
Dyslipidemia	14 (78%)
Coronary artery desease	8 (44%)
Smoker	5 (28%)
Transthoracic ecocardiogram	
EF≥50%	17 (95%)
ΔPmax, mmHg	72,7 ± 16,9
ΔPm, mmHg	44 [41 - 49]
AVA, cm2	0,86 ± 0,25
VTI ratio	0,24 ± 0,05

Table 1 – Baseline Characteristics

Cardiopulmonary Exercise Testing	
Sinus rhythm	13 (72,2%)
Drop in systolic blood pressure > 20 mmHg	7 (38,9%)
Duration of CPET, min	9 ± 2
ST segment depression	6 (33,3%)
Predicted maximal HR, %	84 [73 - 93]
Angina	1 (5,6%)
METs	5 ± 1
Predicted VO2, %	100 ± 21
O2 pulse	10,5 ± 2,2
Event-related oscillations (ERO)	4 (22,2%)
VE/VCO2 slope	35 [33-41]
RER > 1,1	3 (16,7%)

Table 2 – CPET results

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progressive increase in workload, as tolerated. Exercise was maximal when respiratory exchange ratio (RER) ≥ 1.10.
Results: Overall, 18 patients with severe asymptomatic AS were included (mean age 82 ± 5 years, 56% male). Mean AVA is 0.86 ± 0.25 cm^2, median Pm is 44 (41-49) mmHg. When evaluating the standard exercise testing parameters, the most used protocol was a ramp slope one, mean duration of exercise was 9 ± 2 min and mean measured METs were 5 ± 1. One patient had angina, 7 patients dropped in systolic pressure > 20 mmHg and 6 patients presented with ST segment depression on electrocardiogram. CPET parameters additionally have shown a peak oxygen consumption (pVO_2) of 16.6 ± 4.2 mL/min/kg, a minute ventilation/carbon dioxide production ratio (VE/VCO2) of 35 (33-41) and 4 patients had exercise oscillatory ventilation (EOV). Exercise testing was maximal in 9 and 3 patients (per predicted maximum heart rate ≥ 85% and RER ≥ 1.10, respectively). 78% (n = 14) patients had a non-cardiac exercise limitation. The procedure was safe and well-tolerated, without any life-threatening events and no complex arrhythmias reported. Over a median follow up of 10 months, 3 patients underwent surgical valve replacement due to symptomatic AS.
Conclusions: CPET is feasible and safe in patients with asymptomatic AS. It provides additional information identifying non-circulatory causes of the exercise limitation. Whether submaximal parameters are useful as prognostic markers to the workflow treatment of AS is worth being prospectively assessed.

PO 232. HOME-BASED CARDIAC REHABILITATION - THE PATIENTS WANT BUT DO THEY ADHERE?

Catarina Simões de Oliveira[1], Inês Aguiar-Ricardo[2], Tiago Rodrigues[2], Nelson Cunha[2], Sara Couto Pereira[2], Pedro Silvério António[2], Joana Brito[2], Pedro Alves da Silva[2], Beatriz Garcia[2], Rita Pinto[2], Madalena Lemos Pires[2], Mariana Borges[2], Mariana Cordeiro Ferreira[2], Edite Caldeira[2], Fausto J. Pinto[2], Ana Abreu[2]

[1]Centro Hospitalar de Lisboa Norte, EPE/Hospital de Santa Maria. [2]Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa.

Introduction: Cardiac rehabilitation (CR) programs are established interventions to improve cardiovascular health. With covid 19 outbreak, cardiac rehabilitation home based (CR-HB) programs emerged as an alternative. However, its adherence and implementation may vary greatly with socio-demographic factors.
Objectives: To assess adherence to the various components of a CR-HB program.
Methods: Prospective cohort study which included patients who were participating in a centre-based CR program and accepted to participate in a CR-HB after the centre-based CR program closure due to COVID-19. The CR-HB consisted in a multidisciplinary digital CR program, including: 1. Patient regular clinical and exercise risk assessment; 2. Psychological tele-appointments; 3. Online exercise training sessions; 4. Structured online educational program for patients and caregivers; 5. Follow-up questionnaires; 6. Nutrition tele-appointments; 7. Physician tele-appointments. Adherence to the program was assessed by: drop-out rate; number of exercise sessions in which each patient participated; number of educational sessions attended and a validated questionnaire on therapeutic adherence (7 questions with minimum punctuation of 7 and maximum of 40 points).
Results: 116 cardiovascular disease pts (62.6 ± 8.9 years, 95 males) who were attending a Centre-based CR program were included in a CR-HB program. Almost 90% (n = 103) of the participants had coronary artery disease; 13.8% pts had heart failure; the mean LVEF was 52 ± 11%. Regarding risk factors, obesity was the most common risk factor (74.7%) followed by hypertension (59.6%), family history (41.8%), dyslipidaemia (37.9%), diabetes (18.1%), and smoking (12.9%). Ninety-eight patients (85.5%) successfully completed the program. Almost half (46.9%) of the participants did at least one online exercise training session per week. Among the patients who did online exercise training sessions, 58% did 2-3 times per week, 27% once per week and 15% more than 4 times per week. The pts participated, on average, in 1.45 ± 2.6 education sessions (rate of participation of 13.2%) and therapeutic adherence was high (39.7 ± 19; min 35-40). Regarding education status of the pts, 33 pts (45.2%) had a bachelor degree. These pts tended to participate more in exercise sessions (1.7 ± 1.7 vs 1.2 ± 1.4 sessions per week) and in education sessions (2.13 vs 1.6), although this difference was not statistically significant. The therapeutic adherence did not vary with patients' level of education.
Conclusions: Our results showed that a high percentage of patients completed the program and almost half were weekly physically active. However, in regard to educational sessions, the degree of participation was much lower. Educational status seemed to correlate with a more high degree of participation and, in the future, patient selection might offer better results in these kinds of programs.

PO 233. HOME-BASED CARDIAC REHABILITATION IN COVID ERA: IS IT A SAFE OPTION?

Ana Margarida Martins, Inês Aguiar-Ricardo, Rita Pinto, Nelson Cunha, Tiago Rodrigues, Sara Couto Pereira, Pedro Silvério António, Joana Brito, Pedro Alves da Silva, Beatriz Valente Silva, Catarina Oliveira, Beatriz Garcia, Mariana Borges, Madalena Lemos Pires, Sandra Miguel, Fátima Salazar, Fausto J. Pinto, Ana Abreu

Serviço de Cardiologia, Departamento Coração e Vasos, Centro Hospitalar Universitário Lisboa Norte, CAML, CCUL, Faculdade de Medicina, Universidade de Lisboa

Introduction: Home-based Cardiac Rehabilitation (CR-HB) models have been shown to be effective, however, there is a large variation of protocols and minimal evidence of effectiveness in higher risk populations, in which exercise at distance might be concerning. In addition, lack of reimbursement models has discouraged the widespread adoption of CR-HB. During the coronavirus 2019 (COVID-19) pandemic, an even greater gap in CR care has emerged due to the decreased availability of on-site services.
Objectives: Evaluation of the safety of a CR-HB program during COVID-19 pandemic.
Methods: Prospective cohort study which included patients (pts) who were participating in a centre-based CR program and accepted to participate in a CR-HB after the centre-based CR program closure due to COVID-19. The CR-HB consisted in a multidisciplinary digital CR program, including: 1. Patient regular clinical and exercise risk assessment; 2. Psychological tele-appointments and group sessions; 3. Online exercise training sessions, which consisted of recorded videos and real time online exercise training sessions (each session recommended 3 times per week, during 60 minutes); 4. Structured online educational program for pts and family members/caregivers, including educational videos and webinars; 5. Follow-up fortnightly questionnaire to evaluate risk factors control and need for appointments or directing to hospital; 6. Nutrition tele-appointments; 7. Physician tele-appointments, scheduled according to follow-up questionnaire or at pts request (e-mail or telephone) to avoid unnecessary exposure and overload in the hospital. Minor and major adverse events such as hospitalizations due to cardiac event or other non CV reason, cardiac or noncardiac death, during or immediately after the exercise sessions, were collected.
Results: 116 cardiovascular disease (CVD) patients (62.6 ± 8.9 years, 95 males) who were attending a Centre-based CR program were included in a CR-HB program. Almost 90% (n = 103) of the participants had coronary artery disease; 13.8% pts had heart failure. The mean LVEF was 52 ± 11%; 31.1% of the population had at least moderate risk. Regarding risk factors, obesity was the most common risk factor (74.7%) followed by hypertension (59.6%), family history (41.8%), dyslipidaemia (37.9%), diabetes (18.1%), and smoking (12.9%). Ninety-eight CVD pts (85.5%) successfully completed all the online assessments. 3 male participants dropped out for hospitalization due to knee surgery, pacemaker implantation and in-stent restenosis without relation to exercise sessions. No major events were registered and only 1 minor adverse event, sprained ankle, was reported during the training sessions.
Conclusions: This CR-HB program, originated by the need of social distancing during COVID-19 pandemic, revealed to be a valuable and safe strategy to reach at distance most pts previously in a Centre-based CR program.

PO 234. CORONARY ARTERY CALCIFICATION SCORE CAN PREDICT CARDIOVASCULAR DISEASE IN ASYMPTOMATIC PATIENTS WITH METABOLIC SYNDROME

Margarida Temtem[1], Marco Gomes Serrão[2], Isabel Mendonça[2], Marina Santos[2], Flávio Mendonça[2], Adriano Sousa[2], Ana Célia Sousa[2], Mariana Rodrigues[2], Sónia Freitas[2], Eva Henriques[2], Sofia Borges[2], Graça Guerra[2], António Drumond[3], Roberto Palma dos Reis[4]

[1]Hospital Central do Funchal. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]Hospital Dr. Nélio Mendonça. [4]Nova Medical School.

Introduction: Metabolic Syndrome (MetS) is a clinical condition composed of metabolic and cardiovascular risk factors, such as abdominal obesity, hyperglycemia, dyslipidemia and hypertension. Many patients with MetS suffer major adverse cardiovascular events (MACE) that are not adequately identified by traditional risk assessment, suggesting the need for early detection of subclinical coronary heart disease to identify those at high risk. Coronary artery calcification (CAC) screening has added utility in categorizing patients with low, intermediate and high cardiovascular risk.
Objectives: Evaluate the prognostic role of CAC score in cardiovascular events risk prediction in an asymptomatic population with metabolic syndrome.
Methods: A total of 1,122 asymptomatic individuals without known coronary heart disease, enrolled from GENEMACOR study, were followed for a mean of 5.3 ± 3.4 years for the primary endpoint of all cardiovascular events. All persons were referred for computed tomography for the CAC scoring assessment. According to the Hoff's nomogram, 3 categories were created: low CAC (0 ≤ CAC< 100 or p < 50); moderate CAC (100 ≤ CAC< 400 or P50-75) and high or severe CAC (CAC ≥ 400 or P > 75). In a subgroup of 507 individuals with MetS and 615 controls, CAC values were compared by t-Student and association of CAC severity with events occurrence was evaluated. Finally, a logistic regression model adjusted for CAC severity was performed in patients with MetS.
Results: Among our population, the extent of CAC differs significantly between men and women in the same age group. Patients with MetS (23.2%, n = 115) had higher CAC scores than controls (219.0 ± 486.0 vs 115.8 ± 370.8, p < 0.0001). In this cohort, with higher CAC scores, 46.7% vs 22.5% had MACE (p = 0.049) during the follow-up. The logistic regression analysis revealed that CAC ≥ 400 is a MACE predictor (OR = 4.326, 95%CI 1.241-15.080, p = 0.021) in patients with MetS.
Conclusions: Our results point to the importance of the inclusion of CAC screening in patients with MetS to further stratify those patients that, despite tight control of cardiovascular risk factors, may benefit from more intensive therapies. This tool is a useful and straightforward method that could have a significant impact on the prediction of future cardiovascular disease in asymptomatic patients with MetS.

PO 235. LEFT VENTRICULAR REMODELING: IS THERE A REAL IMPACT OF CARDIAC REHABILITATION?

Pedro Alves da Silva[1], Inês Aguiar-Ricardo[2], Nelson Cunha[2], Tiago Rodrigues[2], Sara Couto Pereira[2], Pedro Silvério António[2], Beatriz Valente Silva[2], Joana Brito[2], Ana Beatriz Garcia[2], Susana Pires[2], Marta Ramalhinho[3], Fausto J. Pinto[2], Ana Abreu[2]

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Introduction: Several randomized controlled trials have examined the effect of exercise training on left ventricle (LV) remodeling in individuals with cardiovascular disease. However, the results of these trials have been inconclusive.
Objectives: Evaluation of the impact of a cardiac rehabilitation program (CRP) on left ventricle remodelling evaluated by echocardiogram.
Methods: Observational single centre study including consecutive patients, undergoing structured CRP since June 2016 until February 2020. Phase II CRP included 3 months of exercise training, aerobic and strength exercise, individually prescribed, 3 times a week, 60 minutes sessions. All patients were submitted to a clinical evaluation, echocardiogram, and cardiopulmonary exercise test before and after the CRP.
Results: 205 patients (62.6 ± 11 years, 83.4% men, 82.3% ischemic disease) were included in a phase II CRP. Most patients had ischemic disease (82.3%) and 23.5% of patients had left ventricular ejection fraction (LVEF) < 40%. Of the cardiovascular risk factors, hypertension was the most prevalent (76%), followed by dyslipidaemia (67.4%), active smoking (45.9%) and diabetes (26.9%). After the CRP, there was a significant improvement of LVEF (from 48.3 ± 13 to 52 ± 11.6%, p = 0.001) and a significant reduction of LV volumes (LV end-diastolic volume, LVEDV, decreased from 140 ± 81 to 121 ± 57, p = 0.002; LV end-systolic volume, LVESV, reduced from 80 ± 75 to 64 ± 48, p = 0.004). Considering only patients with LVEF< 40% (n = 38), the improvement was even greater: LVEF increased from 30 ± 8 to 39 ± 13 (p = 0.002); LVEDV reduced from 206 ± 107 to 159 ± 81 (p = 0.001) and LVESV reduced from 142 ± 99 to 101 ± 66 (p = 0.002). 63.6% (n = 14) of these patients improved at least 10% of LVEF and only 1 of them had a cardiac resynchronization therapy device.
Conclusions: A phase II CR program was associated with significant improvements in left ventricular reverse remodelling irrespective of baseline EF classification. Those with reduced baseline EF derived an even greater improvement, highlighting the great importance of CR in this subgroup of patients.

PO 236. PULSE WAVE VELOCITY CAN DETECT HIGH CARDIOVASCULAR RISK IN ASYMPTOMATIC PATIENTS WITH METABOLIC SYNDROME

Margarida Temtem[1], Marco Gomes Serrão[2], Isabel Mendonça[2], Marina Santos[2], Flávio Mendonça[2], Adriano Sousa[2], Ana Célia Sousa[2], Mariana Rodrigues[2], Sónia Freitas[2], Eva Henriques[2], Sofia Borges[2], Graça Guerra[2], António Drumond[3], Roberto Palma dos Reis[4]

[1]Hospital Central do Funchal. [2]Unidade de Investigação, Hospital Dr. Nélio Mendonça. [3]Hospital Dr. Nélio Mendonça. [4]Nova Medical School.

Introduction: Metabolic syndrome (MetS) is a clinical condition composed of metabolic and cardiovascular risk factors, such as abdominal obesity, hyperglycemia, dyslipidemia and hypertension. Many patients with MetS suffer major adverse cardiovascular events (MACE) that are not adequately identified by traditional risk assessment, suggesting the need for early detection of subclinical coronary heart disease to identify those at higher risk. Carotid-femoral pulse wave velocity (PWV), a direct measure of aortic stiffness, has become increasingly crucial for cardiovascular (CV) risk estimation, particularly in patients with high CV risk, as those with MetS.
Objectives: Evaluate the PWV assessment in an asymptomatic population and estimate its prognostic impact in CV events risk prediction, in patients with metabolic syndrome.
Methods: The study was performed with 1122 asymptomatic individuals (507 with MetS and 615 controls) without known coronary heart disease, enrolled

Association between CAC score and MACE in in the Metabolic Syndrome

Variable	Odds ratio (95% CI)	p value
0≤CAC<100	Reference	*0.071*
100≤CAC<400	2.519 (0.619-10.256)	*0.197*
CAC≥400	4.326 (1.241-15.080)	*0.021*

Logistic regression, Forward wald method (SPSS vs. 25.0). CI – Confidence interval; Statistically significant for p<0.05.

PO 234 Figure

Association between PWV and MACE in the Metabolic Syndrome

Variable	Odds ratio (95% CI)	p value
PWV >10 m/s	4.812 (1.694-13.673)	*0.003*

Logistic regression, Forward wald method (SPSS vs 25.0). CI – Confidence interval; Statistically significant for p<0.05.

PO 236 Figure

from GENEMACOR study. This population was followed-up for a mean of 5.3 ± 3.4 years for the primary endpoint of all cardiovascular events. PWV was measured by tonometry, through an automatic device, the Complior and two groups were established, one with PWV ≤ 10 m/s and another with PWV > 10 m/s. Individuals with MetS and controls were compared in terms of PWV values, and the association of PWV with events occurrence was evaluated. Finally, a logistic regression model adjusted for PWV was performed in patients with MetS.

Results: Patients with Mets (16.3%, n = 81) had higher PWV values in comparison to controls (8.61 ± 1.83 vs 7.73 ± 1.54 m/s p < 0.0001). In this cohort of MetS patients with PWV > 10 m/s, 46.7% vs 15.4% had MACE (p = 0.005) during the follow-up. The logistic regression analysis has revealed that PWV > 10 m/s is a MACE predictor (OR = 4.812, 95%CI 1.694-13.673, p = 0.003) in patients with MetS.

Conclusions: Our results evidence that patients with MetS had higher PWV levels and a higher probability of MACE than those with lower PWV. These results reveal the predictive role of this simple assessment in cardiovascular risk estimation. The particular fact that these patients with MetS have a significant CV risk, despite tight control of risk factors, PWV is a useful tool to identify patients that must intensify the preventive and therapeutic approach.

PO 237. HOME-BASED CARDIAC REHABILITATION IN COVID ERA: IS IT A SAFE OPTION?

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Introduction: Home-based Cardiac Rehabilitation (CR-HB) models have been shown to be effective, however, there is a large variation of protocols and minimal evidence of effectiveness in higher risk populations, in which exercise at distance might be concerning. During the coronavirus 2019 (COVID-19) pandemic, an even greater gap in CR care has emerged due to the decreased availability of on-site services.

Objectives: Evaluation of the safety of a home-based cardiac rehabilitation program during COVID-19 pandemic.

Methods: Prospective cohort study which included patients who were participating in a centre-based CR program and accepted to participate in a CR-HB after the centre-based CR program closure due to COVID-19. The CR-HB consisted in a multidisciplinary digital CR program, including: patient regular clinical and exercise risk assessment; psychological tele-appointments and group sessions; online exercise training sessions, which consisted of recorded videos and real time online exercise training sessions (each session recommended 3 times per week, during 60 minutes); structured online educational program for patients and family members/caregivers, including educational videos and webinars; follow-up fortnightly questionnaire to evaluate risk factors control and need for appointments or directing to hospital; nutrition tele-appointments; physician tele-appointments, scheduled according to follow-up questionnaire or at patients request (e-mail or telephone) to avoid unnecessary exposure and overload in the hospital. Minor and major adverse events such as hospitalizations due to cardiac event or other non CV reason, cardiac or noncardiac death, during or immediately after the exercise sessions, were collected.

Results: 116 cardiovascular disease (CVD) patients (62.6 ± 8.9 years, 95 males) who were attending a Centre-based CR program were included in a CR-HB program. Almost 90% (n = 103) of the participants had coronary artery disease; 13.8% patients had heart failure. The mean LVEF was 52 ± 11%; 31.1% of the population had at least moderate risk. Regarding risk factors, obesity was the most common risk factor (74.7%) followed by hypertension (59.6%), family history (41.8%), dyslipidaemia (37.9%), diabetes (18.1%), and smoking (12.9%). Ninety-eight CVD patients (85.5%) successfully completed all the online assessments. Three male participants dropped out for hospitalization due to knee surgery, pacemaker implantation and in-stent restenosis without relation to exercise sessions. No major events were registered during the exercise training sessions and only one minor adverse event, sprained ankle, was reported during the training sessions.

Conclusions: This CR-HB program, originated by the need of social distancing during COVID-19 pandemic, revealed to be a valuable and safe strategy to reach at distance most patients previously in a Centre-based CR program

PO 238. IMPACT OF A COMPREHENSIVE PHASE II CARDIAC REHABILITATION PROGRAM ON LEFT VENTRICULAR FUNCTION, CARDIORESPIRATORY FITNESS AND LIPID PROFILE IN CARDIOVASCULAR PATIENTS

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Introduction: A comprehensive cardiac rehabilitation (CR) program is an effective strategy of secondary prevention consisting in interdisciplinary and multidimensional process with various components, emphasizing exercise training, behavioural change aimed at healthier lifestyle, risk factors control, sexual counselling and psychological factors intervention, with the main purpose of delaying the progression of the underlying cardiovascular disease (CVD).

Objectives: To assess the impact of a comprehensive phase II CR program on left ventricular function, cardiorespiratory fitness and lipid profile in patients with CVD.

Methods: this observational and retrospective single-centre study was developed between June 2017 and February 2020 in a phase II CR program. The CR program consisted of 36 sessions of a combined exercise training regime (aerobic and strength training) and respiratory training, individually prescribed, 3 × week, 60 minutes per session, together with secondary preventive measures. Measures of left ventricular function (by echocardiogram), cardiorespiratory fitness (by cardiopulmonary exercise test on cycle ergometer) and lipid profile were taken at baseline and after completing 36 sessions.

Results: 205 CVD patients (62.6 ± 11 years, 83.4% men, 82.3% ischemic disease) successfully completed the phase II CR program. Most patients had ischemic disease (82.3%) and 23.5% of patients had left ventricular ejection fraction (LVEF) < 40%. Hypertension was the most prevalent (76%) cardiovascular risk factor, followed by dyslipidaemia (67.4%), active smoking (45.9%) and diabetes (26.9%). After completion of the CR program, there was a significant improvement on LVEF (48.3 ± 13% to 52 ± 11.6%, p = 0.001),

a significant reduction on left ventricular (LV) end-diastolic volume (140 ± 81 mL to 121 ± 57 mL, p = 0.002) and LV end-systolic volume (80 ± 75 mL to 64 ± 48 mL, p = 0.004). From lipid profile, HDL-cholesterol increased (44 ± 11 mg/dL to 47 ± 11 mg/dL, p = 0.01). Regarding cardiorespiratory fitness, it was observed an increase in peak workload (107 ± 43W to 126 ± 51W, p < 0.001), in VO2 peak (16.1 ± 4.8 ml/kg/min to 17.0 ± 5.5 ml/kg/min, p = 0.018), predicted VO2 (64 ± 17% to 67 ± 17%, p = 0.025) and respiratory exchange ratio (1.07 ± 0.9 to 1.15 ± 0.13, p < 0.001).
Conclusions: In this group of patients undertaking a phase II CR program, improvements on left ventricular function, cardiorespiratory fitness and HDL-cholesterol were observed. More efforts and strategies should be done to promote greater lipid profile improvement in CVD patients.

Virtual Posters | Posters - K. Cardiovascular Disease In Special Populations

PO 239. PREVENTIVE STRATEGIES FOR ANTHRACYCLINES AND TRASTUZUMAB INDUCED CARDIOTOXICITY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Despite the widespread use of anthracyclines (ANT) and anti-HER2 agents as trastuzumab (TZB) in chemotherapy schemes, it is known the potential cardiotoxic effects that can limit the intensity and duration of treatments.
Objectives: To study the benefit of drugs commonly used to treat heart failure with reduced ejection fraction or drugs known for an antioxidative effect on the prevention of ANT and TZB induced cardiotoxicity.
Methods: An extensive search was made in PubMed, Embase and Cochrane trials, from inception to November 2020 for randomized controlled trials, where the drugs mentioned were given to adult patients treated with ANT and/or TZB. The features considered to evaluate cardiac function were Left Ventricular Ejection Fraction (LVEF), Global Longitudinal Strain, E/A ratio, E/e' ratio, Left Atrium diameter, BNP/NT-pro-BNP and Troponin I. Subgroup analysis were made accounting for combinations of ANT and/or TZB
Results: 24 randomized controlled trials were included and a total of 3159 participants were included in the studies (94% were women). A meta-analysis showed betablockers to lower E/A ratio (combined effect of 0.12 decrease (95%CI [0.05; 0.19], I 2 = 11%), and did not show any effect on LVEF, except perhaps for nebivolol, which in one study demonstrated a mean difference of 6.30% [3.32; 9.28] (p < 0.05) between groups. Angiotensin Conversion Enzyme Inhibitors and Angiotensin Receptor Antagonists did not show any protective effect. Rosuvastatin also showed to preserve LVEF and left atrium diameter and Spironolactone showed to preserve LVEF and E/A and E/e' ratio, however with only one trial each. Dexrazoxane also showed to reduce the incidence of cardiac events and preserve LVEF with a combined risk ratio of0.28 (95%CI: [0.16; 0.47], I 2 = 9%).
Conclusions: Prophylactic administration of either beta-blockers, spironolactone, rosuvastatin or dexrazoxane may prevent the development of ANT and TZB cardiotoxicity and allow for fewer treatment interruptions and a better long-term prognosis of cancer patients.

PO 240. THE PREDICTIVE ROLE OF SPECKLE-TRACKING AND LEFT VENTRICULAR EJECTION FRACTION ESTIMATION USING 2D AND 3D ECHOCARDIOGRAPHY FOR THE DETECTION OF SUBCLINICAL AND CLINICAL CARDIAC DYSFUNCTION DUE TO ANTHRACYCLINES: A SYSTEMATIC REVIEW

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Introduction: 2D echocardiography left ventricular ejection fraction (LVEF) estimation has been the classic parameter for cancer therapy-related cardiac dysfunction (CTrCD) detection. However, it is hypothesized that other parameters can be used in order to detect early stages of subclinical cardiotoxicity with LVEF still preserved. Therefore, 3D LVEF and 2D and 3D strain parameters assessments have been evaluated in patients submitted to anthracyclines treatment.
Objectives: To compare 2D and 3D LVEF and strain parameters estimation using echocardiography regarding its ability to predict and detect subclinical and clinical cardiotoxicity during and after anthracyclines treatment. Search methods and criteria: Search was performed on PubMed and EMBASE from January 1st of 2000 to October 31th of 2020. Observational studies comparing 2D and 3D echocardiographic exams performed in adult patients submitted to anthracyclines were analyzed. Studies that evaluated survivors to pediatric cancer were excluded. 11 studies were included in this systematic review (n = 844 patients).
Results: 2D and 3D LVEF decreased throughout the echocardiographic assessments of 7 studies, but 2D LVEF drops were not statistically significant in 4 studies and 3 studies showed that 3D LVEF detected a superior number of patients with abnormal LVEF. Compared to 3D LVEF, 2D GLS decreased at an earlier point of treatment and detected a superior number of patients with subclinical LV dysfunction. Despite 2D and 3D GLS decreased throughout treatment, 3D GLS measurements were consistently lower and had higher relative variation. All 3D strain parameters decreased during and after the treatment and have higher relative variations than 2D GLS, with the exception of 1 study. 3D GLS reference values are not yet recognized by guidelines, so subclinical LV dysfunction was not evaluated.
Conclusions: LVEF estimation through 3D proved to be a better parameter for CTrCD detection vs 2D imaging. GLS is superior to 3D LVEF in detecting earlier LV changes, even if calculated using 2D echocardiography. Moreover, GLS reduction can be a predictor of subsequent LVEF decrease. 3DE is a growing potential technique and may be superior to 2DE in detecting and predicting subclinical LVEF dysfunction and CTrCD, respectively. Though 3D strain parameters presented promising results, more studies are needed to prove its incremental value over 2D strain echocardiography.

PO 241. CARDIOVASCULAR DISEASE IN AN INTENSIVE CARE UNIT: PATTERNS OF AN OFTEN FATAL OMEN

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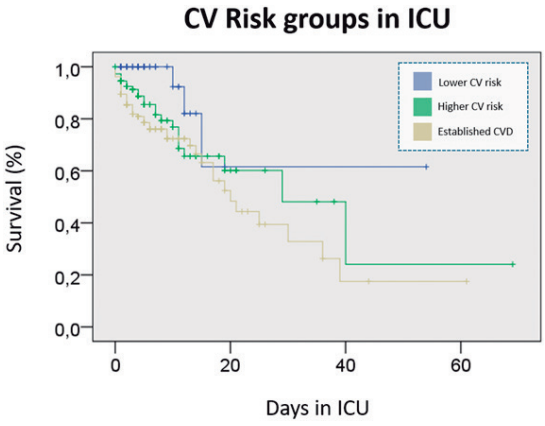
Introduction: Care for the critically ill patient with Cardiovascular Disease (CVD) requires a unique management approach, as the theoretical critical threshold for decompensation is lower and inherent adaptive mechanisms may be compromised. We aimed to characterize the prognostic impact of CVD in patients admitted to an Intensive Care Unit (ICU).
Methods: We performed a cohort study of consecutive patients admitted to an ICU from January to December 2019. Patients were stratified as follows: (1) established CVD – presence of either atrial fibrillation, heart failure, coronary artery disease and/or peripheral artery disease; (2) at higher risk of CVD – known arterial hypertension, dyslipidemia, diabetes *mellitus* and/or current smoking, in the absence of established CVD; and (3) at lower risk of CVD – i.e. none of the above. The co-primary endpoints were all-cause death in ICU and death during index hospitalization.
Results: During 2019, there were 334 admissions in ICU, comprising a total of 296 patients (mean age 67 ± 15 years, 58.1% male). Overall, 69 (23.3%) and 108 (36.5%) died in ICU and during index hospitalization, respectively. Compared to patients at lower risk of CVD, those at higher CVD risk or with established CVD had markers of more severe disease, as noted by higher risk scores (e.g., SAPS-II 35.0 ± 20.0 vs. 43.5 ± 22.3 vs. 52.6 ± 20.0; p < 0.001), higher rates of mechanical ventilation (41.5 vs. 57.3 vs. 63.9%; p = 0.020), shock during ICU stay (34.0 vs. 52.7 vs. 66.9%; p < 0.001) and acute kidney injury (26.4 vs. 35.5 vs. 57.9%; p < 0.001), respectively, as well as higher

death rates in ICU (5.7 vs. 21.8 vs. 31.6%; p = 0.001) and index hospitalization (9.4 vs. 37.3 vs. 46.6%; p < 0.001). In multivariate analysis, adjusted for age and cause of admission, established CVD independently predicted the risk of all-cause death in ICU (HR: 2.084; 95%CI: 1.136-3.823; p = 0.018) and during index hospitalization (HR 1.712; CI: 1.009-2.889; p = 0.046). The analysis for the group of patients at higher risk of CVD yielded similar results to the abovementioned.



Conclusions: Roughly 4 in every 5 patients admitted in ICU were at risk of or had established CVD. The presence of either of the above independently predicted a two- to three-fold higher risk of death during hospitalization. Our findings emphasize the considerable burden of CVD in ICU and underscore the importance of comprehensive management of the complex critically ill patient.

PO 242. RIGHT VENTRICULAR FUNCTION AFTER BREAST CANCER CHEMOTHERAPY

Geraldo Dias, Pedro Von Hafe, Ana Filipa Cardoso, Tâmara Pereira, Mariana Tinoco, Liliana Oliveira, Ana Sofia Rolo, Ilda Faustino, Alexandra Teixeira, Olga Azevedo, Filipa Almeida, António Lourenço

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Introduction: Breast cancer chemotherapy is widely associated with cardiotoxicity, particularly with anthracyclines (AC) and trastuzumab (T). Although the development of left ventricular (LV) dysfunction is well established, the impact of these agents in the right ventricular (RV) function is still not clearly defined.
Objectives: In this study, we aim to evaluate the impact of AC and T in RV function.
Methods: We performed a retrospective study including breast cancer patients treated with these chemotherapy agents in a single center from 2017 to 2018. The pre-treatment and the smallest post-treatment value of tricuspid annular systolic velocity (S') were analyzed. Patients with pre-treatment right ventricular longitudinal dysfunction, defined as having S' inferior to 9.5 cm/s, were excluded.
Results: Fifty-one (51) women were included, with mean age of 54 ± 11 years, treated with AC (25; 49.0%), with T (8; 15.7%) or both AC and T (18; 35.3%). During follow-up, 2 individuals (3.9%) developed RV longitudinal dysfunction, 1 under treatment with both AC and T and 1 under treatment with T. Both dysfunctions were mild (S' of 9.0 cm/s) and transient, and only the latter was associated with concomitant LV dysfunction. There was a significant decrease in the S' absolute values during follow-up in the three groups, with the pre-treatment to post-treatment mean values of 14.2 ± 2.0 vs 13.4 ± 2.4 cm/s (p = 0.046) in AC group, 14.5 ± 2.7 vs 11.5 ± 1.9 cm/s (p = 0.021) in T group and 14.1 ± 2.8 vs 11.8 ± 1.5 cm/s (p < 0.001) in AC + T group. When considering the mean variation of pre-treatment to post-treatment S' values (ΔS'), the larger difference was observed between the group treated with T and the group treated with AC, with a mean difference of 2.1 ± 0.9 cm/s between the groups, although after ANOVA and post hoc Tukey test this difference was not statistically significant (p = 0.055). However, when comparing the 26 individuals that were exposed to T with the remaining 25 that were not exposed, a statistically significant difference was found between the ΔS' values of these two groups (2.54 ± 2.3 vs 0.9 ± 2.1 cm/s, p = 0.009).
Conclusions: RV dysfunction was not a frequent finding in our study; this appears to be in contrast to what is already established for LV dysfunction. Nevertheless, there was a significant decrease in S' absolute value during follow-up in patients treated with either T, AC or both agents. The decline in S' seems to be more pronounced in patients treated with T compared to the patients only treated with AC. However, larger studies are needed to corroborate this finding.

PO 243. FIGHTING THE PANDEMIC WITH COLLABORATION AT HEART: REPORT FROM CARDIOLOGISTS IN A COVID-19 DEDICATED PORTUGUESE INTENSIVE CARE UNIT

Pedro Ribeiro Queirós, Daniel Caeiro, Marta Ponte, Cláudio Guerreiro, Marisa Silva, Sara Pipa, Ana Lúcia Rios, Diana Adrião, Raúl Neto, Diogo Ferreira, Fábio Nunes, Gualter Silva, Mariana Brandão, Mariana Silva, Rafael Teixeira, Nuno Dias Ferreira, Paula Castelões, Pedro Braga

Centro Hospitalar de Vila Nova de Gaia/Espinho.

Introduction and Objectives: The coronavirus disease 2019 (COVID-19) spread quickly around the world. Although mainly a respiratory illness, there is growing interest in non-respiratory manifestations, particularly cardiovascular ones. At our centre, mobilization of cardiologists with intensive care training was needed. Our aim is to describe the patients with severe COVID-19 admitted in a Portuguese ICU, the cardiovascular impact of the disease and the experience of cardiologists working in a COVID-19 ICU.
Methods: Data from adult patients with COVID-19 admitted to the hospital between 16th March 2020 and 21st April 2020 were retrospectively analysed.
Results: Thirty-five patients were admitted. Mean age was 62.6 ± 6.0 years and 23 (65.7%) were male. Dyslipidaemia was the most common cardiovascular risk factor (65.7%, n = 23), followed by hypertension (57.1%, n = 20). Mean ICU stay time was 15.9 ± 10.0 days. Patients had high rates of mechanical ventilation (88.6%, n = 31) and vasopressor support (88.6%, n = 31). Low rates of new onset left systolic dysfunction were detected (8.5%, n = 2). One patient required veno-arterial extra-corporeal membrane oxygenation. Mortality rate was 25% (n = 9). Acute myocardial injury and N-terminal pro brain natriuretic peptide (NT-proBNP) elevation was detected in 62.9% (n = 22). Patients that died had higher NT-proBNP compared to those discharged alive (p < 0.05). Care by cardiologists frequently changed decision making.
Conclusions: The cardiovascular impact of COVID-19 seems relevant but is still widely unknown. Studies are needed to clarify the role of cardiac markers in COVID-19 prognosis. Multidisciplinary care most likely results in improved patient care.

Virtual Posters | Posters - L. Cardiovascular Pharmacology

PO 244. EFFICACY AND SAFETY OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS AND COLCHICINE IN MYOPERICARDITIS

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Introduction: Non-steroidal anti-inflammatory drugs (NSAIDs) and colchicine are the cornerstone of treatment for pericarditis. However, their use in

myopericarditis is less consensual, since in animal models of myocarditis, NSAIDs have shown to be non-efficacious and may enhance inflammation, increasing mortality. This lead to a recommendation to use the lowest efficacious doses to control chest pain. Colchine has shown benefit in reducing pericarditis recurrence, but there is less evidence of benefit in the setting of myopericarditis. The purpose of this study was to evaluate the safety and efficacy of NSAIDs and colchicine in patients hospitalized for myopericarditis.

Methods: This was a retrospective observational study including consecutive patients hospitalized due to myopericarditis. Hospital records were consulted to evaluate baseline characteristics, biomarkers of inflammation and myocardial injury, echocardiography and in-hospital complications. The cumulative dose of NSAIDS and colchicine during hospitalization and after discharge was assessed. Follow-up was observed, to evaluate for the occurrence of major adverse events – death, heart failure hospitalization, myopericarditis recurrence and complex ventricular arrhythmias.

Results: Of the 67 patients included in the study, 78% were male and median age was 40 years (IQ 32-52). The median highest C reactive protein was 5.3 mg/dL (IQ 5.3-9.5) and the highest troponin I was 9,610 pg/mL (IQ 3,500-182,400). 3% of patients developed heart failure during hospitalization. Median left ventricular ejection fraction at discharge was 58% (IQ 58-62). NSAIDs were given to 97% of patients during hospitalization and 90% at discharge. Colchicine was given to 25% during hospitalization and 21% at discharge. Median follow-up was 3.38 years (IQ 1.97-4.50). Major adverse events occurred in 7.5% of patients – death in 3%, heart failure hospitalization in 1.5%, myopericarditis in 6.1% and complex ventricular arrhythmias in 1.5%. Cumulative NSAID dose received during follow-up was significantly associated with reduced incidence of the composed endpoint of major adverse events (p = 0.002). Cumulative colchicine dose was associated with reduced incidence of myopericarditis recurrence. On statistical analysis, no significant sign of harm was found of colchicine or NSAID use in each of the individual pre-specified endpoints.

Conclusions: NSAID and colchicine use during hospitalization and after discharge were significantly associated with reduced incidence of the composite endpoint and recurrent myopericarditis, respectively. No sign of harm was found. NSAIDs and colchicine appear to be safe in the setting of myopericarditis. Further prospective data will assess this hypothesis.

Virtual Posters | Posters - M. Cardiovascular Nursing

PO 245. QUALIDADE DE VIDA DOS DOENTES INSERIDOS NUM PROGRAMA DE ENFERMAGEM DE REABILITAÇÃO

Catia Ferreira, Patrícia Silva, Ana Carina Ferreira, Licinia Aguiar, Cristiana Teles, Raúl Pinto, Joana Antunes

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Segundo Ferreira (2012), o aumento da prevalência de doenças crónicas e o desenvolvimento dos conceitos de saúde e de Qualidade de Vida (QV), levam a que o tratamento da doença cardíaca tenha por objetivo, não apenas o prolongar a vida e a capacidade do indivíduo em conseguir manter normalmente as suas atividades habituais, mas também o melhorar a QV, apesar das limitações sentidas. Pretendemos avaliar o nível de QV dos 51 doentes inseridos no programa de Enfermagem de Reabilitação e selecionados para o projeto de investigação. Foram selecionamos todos os doentes coronários, com diagnóstico de admissão de angina, com doença coronária anteriormente conhecida, Enfarte Agudo do Miocárdio com ou sem supra do segmento ST, até 65 anos, orientados para tratamento médico ou que tenham realizado revascularização percutânea, internados de novembro de 2019 a março de 2020. O instrumento de recolha de dados escolhido foi o Questionário da Avaliação do Estado de Saúde (SF36v2). Na sua maioria, os doentes sentem pouca ou nenhuma limitação na função física; nunca sentiram que tiveram problemas nas atividades diárias como consequência do seu estado de saúde físico; apesar de sentirem dores a nível moderado, continuaram a fazer o seu trabalho normal sem qualquer interferência; veem a sua saúde como razoável; acreditam de que a sua saúde não vai piorar; sentem-se cheios de vitalidade a maior parte do tempo e com muita energia algum tempo, mas, contrariamente, referem sentir-se estafados e cansados a maior parte do tempo; não sentiram que a sua saúde física ou problemas emocionais tenham interferido no seu relacionamento social e nunca limitaram a sua atividade; admitiram que nunca tiveram com as suas atividades diárias, algum problema devido a qualquer problema emocional e que isso tenha diminuído o tempo gasto a trabalhar, ou tenham feito menos do que queriam, ou executado as atividades menos cuidadosamente do que o habitual; admitiram sentirem-se algum tempo nervosos, pouco tempo calmos, no entanto, nunca se sentiram deprimidos e que nada os animava e alguns referiram sentir-se algum tempo felizes. A autoavaliação da QV é importante, pois monitoriza os resultados do impacto da doença nas diversas dimensões do individuo e a efetividade das intervenções que contribuem para a sensibilização, promoção da gestão e adesão do regime terapêutico dos doentes com patologia cardíaca inseridos nos programas de Reabilitação Cardíaca.

PO 246. ESTADO DE SAÚDE DOS DOENTES INSERIDOS NUM PROGRAMA DE ENFERMAGEM DE REABILITAÇÃO

Raúl Pinto, Patrícia Silva, Ana Carina Ferreira, Licinia Aguiar, Cristiana Teles, Joana Antunes, Cátia Ferreira

Centro Hospitalar do Tâmega e Sousa, EPE/Hospital Padre Américo, Vale do Sousa.

Para Ferreira (2012), a Qualidade de Vida (QV) é uma interpretação do doente acerca do seu próprio Estado de Saúde (ES), tendo em conta a sua experiência de vida e o que ainda perspetiva ser capaz de fazer. Deste modo, vários estudos demonstram que a redução da QV é um problema inerente ao indivíduo com doença coronária. Como objetivo, pretendemos avaliar o nível de ES de 51 doentes inseridos num programa de Enfermagem de Reabilitação de um serviço de Cardiologia. Para a amostra foram selecionados todos os doentes coronários internados de novembro de 2019 a março de 2020, com diagnóstico de admissão de angina, doença coronária anteriormente conhecida ou Enfarte Agudo do Miocárdio com ou sem supra do segmento ST, com idade inferior ou igual a 65 anos, orientados para tratamento médico ou que tenham realizado revascularização percutânea. O instrumento de recolha de dados escolhido para o estudo foi o Questionário da Avaliação de Ganhos em Saúde (EQ5D). Verificamos que quanto aos dados subjetivos relativos ao seu ES, os doentes não sentem problemas na mobilidade, nos cuidados pessoais, na realização das suas atividades habituais, nem apresentam dor/mal-estar. No entanto, admitem estar moderadamente ansiosos/deprimidos com a situação de saúde que vivenciam atualmente. No que respeita ao ES atual, os doentes consideram-se piores que há um ano atrás, apesar de se avaliarem com um ES mediano numa escala de 0 a 100. A autoavaliação do ES tem-se tornado um complemento dos indicadores clínicos objetivos e uma medida de resultado cada vez mais relevante na prática clínica diária dos programas de reabilitação cardíaca, pois reflete o impacto da doença e do tratamento nas diversas dimensões do indivíduo.

PO 247. A SEGURANÇA DO DOENTE NA CARDIOLOGIA: O CASO DAS TRANFERÊNCIAS DE INFORMAÇÃO

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Introdução: A qualidade e a segurança dos cuidados de enfermagem e de saúde prestados só poderá ser assegurada de forma eficaz através da manutenção de uma comunicação efetiva. As transferências de informação são momentos críticos, que se revestem de elevado nível de risco e vulnerabilidade. As principais causa de eventos adversos são erros comunicacionais. Ao abordar

a questão na perspetiva da pessoa com doença cardiovascular, internada num departamento de Cardiologia, incrementamos o nível de risco, dada a especificidade. Sabe-se que, o enfermeiro cardiovascular deve deter competências comunicacionais essenciais no cuidado à pessoa. Neste sentido, foram desenvolvidas ações parte integrante de um programa de melhoria de competências comunicacionais para enfermeiros do departamento de Cardiologia.
Objetivos: Descrever resultados de implementação de programa para desenvolvimento de competências comunicacionais num internamento de Cardiologia.
Métodos: Após obtenção de consentimento informado por parte da equipa e de estabelecido o período temporal de avaliação, foram realizadas por dois investigadores de forma independente e aleatória, observações estruturadas de momentos de transição de cuidados, utilizando o instrumento adaptado para o efeito, com base na Norma 001/2017 da DGS. Tendo sido avaliados: os tipos de momentos de transição de cuidados observados; a existência de informação escrita durante momentos de transição de cuidados observados; a utilização da ténica comunicacional e dos critérios definidos para as dimensões: identificacão da situacãop atual, antecedentes, avaliação e recomendações.
Resultados: Foram observados três tipos diferentes de momentos de transicão de cuidados: admissão de doentes; passagens de turno de enfermagem; comunicação interdisciplinar. A comunicacão de forma escrita foi utilizada em 85% dos momentos. Houve recurso a técnica preconizada em 90% dos momentos de transição de cuidados. A dimensão identificação registou um *score* de 84%. A dimensão situação atual obteve um *score* de 97%. A dimensão antecedentes registou um *score* de 79%. Na dimensão avaliação verificou-se um *score* de 73%. Nas recomendações foi observado um *score* de 82%. Havendo uma aplicação de competências global superior a 70% em todas as dimensões.
Conclusões: Apesar de se registar um *score* global de 90%, analisando estratificadamente cada dimensão, existem critérios que não foram priorizados nas observações efetuadas pelos enfermeiros, o que coloca em evidência algumas fragilidades do programa. No sentido desenvolver de forma mais eficaz estas competências comunicacionais na área da enfermagem cardiovascular, podem ser adotadas diferentes estratégias tendo em conta a proposta de currículo da ACNAP-ESC, introduzindo outras metodologias educacionais para desenvolvimento profissional.

PO 248. A INSUFICIÊNCIA CARDÍACA E A COVID-19: ANÁLISE DO IMPACTO NA QUALIDADE DE VIDA

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Introdução: A pandemia do SARS-CoV2 e as medidas instituídas desde a sua chegada ao nosso país, em março de 2020, colocaram diversos desafios ao Sistema Nacional de Saúde (SNS), nomeadamente no seguimento dos doentes crónicos. A atividade assistencial não foi interrompida, mas obrigatoriamente houve a necessidade de re-estruturar as instituições e redefinir focos de atuação. Neste sentido pretende-se avaliar o impacto da adaptação da atividade assistencial e da situação pandémica na qualidade de vida (QV) dos doentes seguidos numa clínica de insuficiência cardíaca (CIC).
Objetivos: Avaliar a perceção do doente com Insuficiência Cardíaca (IC) acerca da alteração da sua QV durante a pandemia por COVID-19.
Métodos: Estudo retrospetivo, unicêntrico, de doentes acompanhados na CIC entre março a abril de 2020. Análise baseada na aplicação do questionário *Kansas City Cardiomyopathy Questionnaire (KCCQ-12*) e de um questionário próprio relativo ao impacto da pandemia no quotidiano do doente.
Resultados: Foram incluídos 80 doentes, maioritariamente do sexo masculino (n = 63; 78,8%), com idade média de 62,6 ± 12,4 anos. 86,3% dos doentes (n = 69) afirmou respeitar o confinamento, sendo que 52,3% (n = 41) se sentem «assustados» ou «muito assustados» com a pandemia. Relativamente ao apoio do SNS, 30,0% (n = 24) refere sentir menos apoio por parte do SNS; no entanto, 95,0% (n = 76) dos inquiridos referem sentir o mesmo apoio da equipa da CIC. Relativamente à aplicação do KCCQ, o *score* médio do questionário foi de 56,6 ± 7,1 [0;70]. Dos quatro domínios avaliados, as maiores limitações sentidas foram no domínio da limitação física (31,0%) e da QV (24,4%). De realçar que, apesar do contexto epidemiológico atual, 76,3% (n = 61) referiram não apresentar limitações na «capacidade de gozar a vida», estando «satisfeitos» ou «bastantes satisfeitos» quanto ao seu estado de saúde atual.
Conclusões: Apesar dos desafios decorrentes da situação pandémica atual, tanto a nível pessoal como institucional, a presente análise demonstra que as adaptações feitas pela equipa da CIC permitiram aos doentes sentirem-se seguros. O facto de a maioria se encontrar «satisfeito» com o seu estado de saúde reforça a importância da reestruturação das instituições tendo em vista os melhores cuidados de saúde ao doente com patologia crónica, de modo a evitar descompensações da doença e deterioração da sua qualidade de vida e prognóstico.

Virtual Posters | Posters - N. E-Cardiology/ Digital Health, Public Health, Health Economics, Research Methodology

PO 249. WHAT ARE THEY SAYING ABOUT ACUTE MYOCARDIAL INFARCTION ON YOUTUBE?

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Introduction: Ischemic heart disease is the leading cause of death worldwide. Internet is an important tool for seeking health information and it can help to improve general public's health education. However, the lack of quality control in the health information available potentiates misinformation.
Objectives: To evaluate the relevance and quality of acute myocardial infarction videos shared on YouTube (www.youtube.com) in Portuguese.
Methods: A total of 1,000 videos were analyzed, corresponding to the first 100 search results on YouTube with the terms (in Portuguese): "cardiac + arrest"; "heart + attack"; "heart + thrombosis"; "coronary + thrombosis"; "infarction – brain", "myocardial + infarction", and "acute + myocardial + infarction". Irrelevant (n = 316), duplicated (n = 345), without audio (n = 24) or non-Portuguese (n = 106) videos were excluded. Included videos were evaluated for source, topic, target audience, and scientific inaccuracies. The quality of information was assessed using The Health on the Net Code (HONCode from 0 to 8) and the DISCERN (from 0 to 5) scores – the higher, the better quality.
Results: 242 videos were included (mean duration 9.2 ± 0.8 minutes, minimum 0.3 and maximum 89.3 minutes), with a total of 2,226 minutes. The majority were published by independent instructors (n = 95, 39%) and were addressed to the general population (n = 202, 83.5%). Videos from independent instructors received the best approval by the public (like/ dislike ratio of 43.7 (19.4-76.7)). Videos from personal experience had the most views (63,304.52 views, 111.5-683,598.3) and comments (69 comments, 2-593). Videos from television shows had a significant larger number of views (11,396, 1,462-49.073) compared to videos from news channels (291, 15-1,083 views, p = 0.001), pharmaceutical industry (70, 25-128 views, p = 0.010), and scientific societies (234, 58-12,963 views, p = 0.026). The most discussed topic was "signs and symptoms" (62%, n = 150). One third of the videos (n = 79) had inaccuracies; however, videos from scientific societies and governmental/health institutions had no inaccuracies. The mean video quality was poor or moderate (HONCode score 3.0 ± 1.1, DISCERN 2.4 ± 0.7); only one video had good quality without inaccuracies. Governmental/ health institutions were the source with best quality videos (HONCode 4 ± 1, DISCERN 2 ± 1).

Conclusions: One third of the videos had irrelevant information and one third of the relevant ones had inaccuracies. As the average video quality was low it is important to define strategies to improve the quality of the available onlinehealth information.

PO 250. THE IMPACT OF DIGITAL FLASHCARDS ON CARDIOVASCULAR PHYSIOLOGY ACADEMIC PERFORMANCE IN A MEDICAL COURSE – A CONSISTENT DOSE-DEPENDENT EFFECT BETWEEN THE AMOUNT OF TRAINING AND ACADEMIC SUCCESS

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Introduction: Digital flashcards are used to review factual knowledge through active-recall and spaced-repetition, while allowing subsequent self-assessment.
Objectives: To assess if using digital flashcards is associated with cardiovascular physiology (CVP) academic success and better knowledge retention in short- and medium-terms, through a dose-dependent effect.
Methods: We conducted a single-faculty cohort study of 2nd year medical students enrolling in CVP course, using an online platform comprising 676 original flashcards. An exploratory analysis examined the grades from three exams (2019), being the latest optional and performed 1 month after the end of the course. Subsequently, a confirmatory study used the results of a fourth exam (2021) in another cohort. One-sample t-test was used to compare the grades (0-20 scale) between flashcard-users versus non-users, and the amount of training was correlated with the exam results using Pearson's correlation. Additionally, multiple linear regression models were created for the exploratory analysis, and a simple linear regression was applied for the confirmatory study. A p value of < 0.05 was considered statistically significant.
Results: Of the 312 students enrolled, 279 participated in the exploratory analysis, and 87% studied from flashcards. The confirmatory evaluation assessed data from 269 students, of which 66% used the platform. Flashcard-users scored higher versus non-users (11.8 ± 3.6 vs. 9.5 ± 3.6, p < 0.001; 12.5 ± 3.0 vs. 11.5 ± 3.2, p = 0.225; 10.2 ± 4.7 vs. 7.5 ± 4.5, p = 0.041; 1st, 2nd and 3rd exams, respectively), which was consistent with the confirmatory analysis results (11.2 ± 3.5 versus 8.9 ± 3.5, p < 0.001). The amount of training was positively correlated with academic success, for both exploratory and confirmatory analysis (r = 0.37, r = 0.35, r = 0.29, r = 0.34; 1st-4th exams, respectively, p≤ 0.001 for all). Multiple linear regression models (Figure) showed a statistically significant and dose-dependent association between results and the number of flashcards studied – for every 1000, there was an increase in 0.98 (p = 0.001), 1.22 (p = 0.017) and 1.00 (p = 0.022) in the 1st, 2nd and 3rd exam grades, respectively. A linear regression model was applied for the subsequent study, which confirmed this positive association – for each 1,000 flashcards studied, grades were 2.5 points higher (p < 0.001).
Conclusions: Studying CVP with digital flashcards has a moderate correlation with grades, through a positive and consistent dose-dependent effect, both in short- and medium-terms. This strategy seems effective in improving medical academic success and knowledge retention.

PO 251. BUILDING A NEW PCI CENTRE WITH THE HELP OF PROCESS MINING TOOLS

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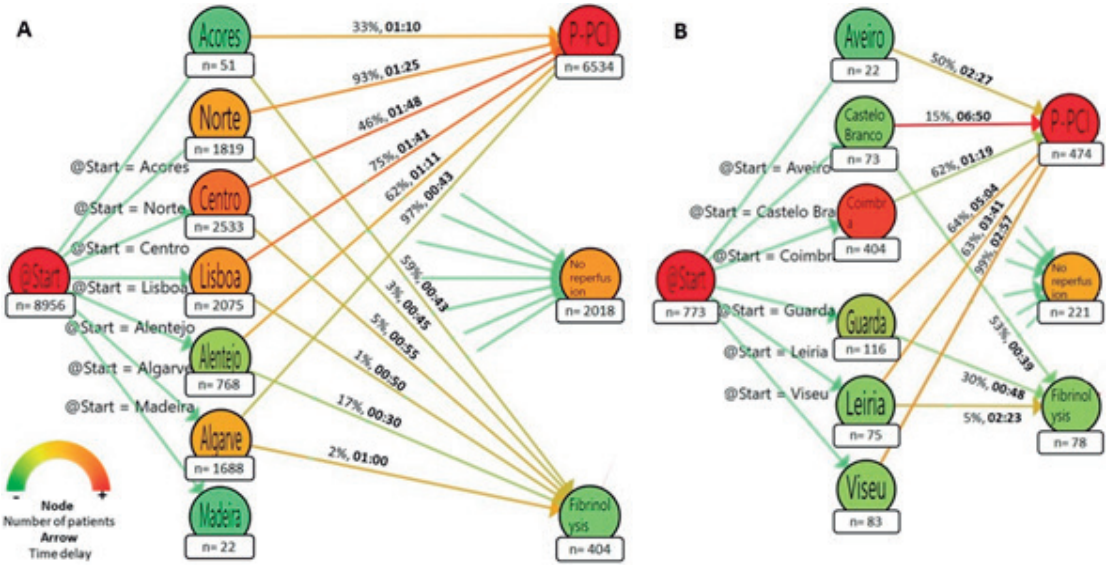
Introduction: In ST-segment elevation myocardial infarction (STEMI), time delay between symptom onset and treatment is critical to improve outcome. The expected transport delay between patient location and percutaneous coronary intervention (PCI) centre is paramount for choosing the adequate reperfusion therapy. The "Centre" region of Portugal has heterogeneity in PCI assess due to geographical reasons. We aimed to explore time delays between regions using process mining (PM) tools.
Methods: We retrospectively assessed the Portuguese Registry of Acute Coronary Syndromes for patients with STEMI from October 2010 to September 2019, collecting information on geographical area of symptom onset, reperfusion option, and in-hospital mortality. We used a PM toolkit (PM4H – PMApp Version) to build two models (one national and one regional) that represent the flow of patients in a healthcare system, enhancing time differences between groups. One-way analysis of variance was employed for the global comparison of study variables between groups and post hoc analysis with Bonferroni correction was used for multiple comparisons.
Results: Overall, 8,956 patients (75% male, 48% from 51 to 70 years) were included in the national model (Figure 1A), in which primary PCI was the treatment of choice (73%), with the median time between admission and primary PCI < 120 minutes in every region; "Lisboa" and "Centro" had the longest delays, (orange arrows). Fibrinolysis was performed in 4.5%, with a median time delay < 1 hour in every region. In-hospital mortality was 5%, significantly higher for those without reperfusion therapy compared to PCI and fibrinolysis (10% vs. 4% vs. 4%, p < 0.001). In the regional model (Figure 1B) corresponding to the "Centre" region of Portugal divided by districts (n = 773, 74% male, 47% from 51 to 70 years), only 61% had primary PCI, with "Guarda" (05:04) and "Castelo Branco" (06:50) showing significant longer delays between diagnosis and reperfusion treatment (orange and red arrows, respectively) than "Coimbra" (01:19) (green arrow); only 15% of patients from "Castelo Branco" had primary PCI. Fibrinolysis was chosen in 10% of patients, mostly in "Castelo Branco" (53%), followed by "Guarda" (30%), with a median time delay of 39 and 48 minutes, respectively. Regarding mortality, PCI and fibrinolysis groups had similar death rates while those patients without reperfusion had higher mortality (5% vs. 3% vs. 13%, p = 0.001).
Conclusions: Process mining tools help to understand referencing networks visually, easily highlighting inefficiencies and potential needs for improvement. The "Centre" region of Portugal has lower rates and longer delay to primary PCI partially due to the geographical reasons, with worse outcomes in remote regions. The implementation of a new PCI centre in one of these districts, is critical to offer timely first-line treatment to their population.

Multiple linear regression models

	First Exam R^2/R^2a=0.576/0.566			Second Exam R^2/R^2a=0.304/0.247			Third Exam R^2/R^2a=0.290/0.271		
	β	95% CI	p	β	95% CI	p	β	95% CI	p
Each 1000 flashcards	0.98	0.42; 1.54	0.001	1.22	0.23; 2.21	0.017	1.00	0.14; 1.85	0.022
Age (years)	−0.53	−0.69; −0.36	<0.001	−0.23	−0.58; 0.00	0.053	−0.53	−0.86; −0.20	0.002
Sex*	0.95	0.26; 1.64	0.007	0.81	−0.60; 2.22	0.255	0.27	−0.94; 1.47	0.664
Faculty Admission Grade	−0.01	−0.05; 0.03	0.556	0.04	−0.05; 0.12	0.398	0.00	−0.08; 0.07	0.914
Medicine Course Grade	1.69	1.40; 1.90	<0.001	0.78	0.10; 1.46	0.025	1.43	1.00; 1.86	<0.001

R^2a: adjusted R^2; CI: confidence interval; *1 – male, 0 – female.

PO 250 Figure



PO 251 Fgiure

PO 252. UTILITY AND COST OF ROUTINE BLOOD TEST PROFILES IN ACUTE CORONARY SYNDROME: A MULTICENTER SURVEY STUDY

Inês Fialho[1], Miguel Borges Santos[2], João Bicho Augusto[2], Daniel Faria[2], João Baltazar Ferreira[2], Marco Beringuilho[2], Hilaryano Ferreira[2], Mariana Passos[2], Joana Lima Lopes[2], Sérgio Baptista[2], Luís Brízida[2], Carlos Morais[2]

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Introduction: Blood test (BT) profiles are widely available in medical institutions and contribute to improve the efficiency of medical care. However, its easy access can lead to overuse and a consequent increase in health costs.
Objectives: For 2 different clinical scenarios, hospital admission for ACS and post-ACS follow-up appointments, we aimed to (i) evaluate which BTs are considered useful by Portuguese cardiologists and (ii) how much can be saved if only useful BTs are prescribed.
Methods: Consultant Cardiologist and Cardiology residents from nine Portuguese hospitals were invited via e-mail to participate in an online anonymous survey.

	Indispensable BT	Routinely useful BT	Not routinely useful
ACS admission	full blood count serum creatinine sodium potassium total cholesterol LDL cholesterol high-sensitivity troponin	glycated hemoglobin NT-proBNP serum urea C reactive protein triglycerides alanine aminotransferase HDL cholesterol	creatinine kinase creatinine kinase MB mioglobin serum chloride serum magnesium international normalized ratio partial thromboplastin time activated D dimer fibrinogen aspartate aminotransferase lactate dehydrogenase Gamma-glutamyl transferase total bilirrubin direct bilirrubin amylase uric acid blood glucose thyroid stimulating hormone free thyroxine (fT4) free triiodothyronine (fT3) HIV serology Hepatitis B serology Hepatitis C serology urinalysis
ACS outpatient appointment	full blood count serum creatinine sodium potassium total cholesterol LDL cholesterol	glycated hemoglobin HDL cholesterol triglycerides serum urea	serum chloride serum magnesium international normalized ratio partial thromboplastin time activated aspartate aminotransferase lactate dehydrogenase gamma-glutamyl transferase total bilirrubin direct bilirrubin amylase uric acid blood glucose glucose tolerance test HDL cholesterol VLDL cholesterol

Table 1 - Blood test profiles considered routinely useful and not routinely useful

PO 252 Figure

The survey included questions about the local availability of BT profiles and which BTs are considered routinely useful in the aforementioned scenarios. Some BTs are absolutely necessary and were excluded from the survey (full blood count, serum creatinine, sodium and potassium, total cholesterol, LDL cholesterol and high-sensitivity troponin). For the cost analysis, a BT was considered useful whenever ≥ 65% of answers indicated so. The reference cost for each test was obtained from the Clinical Pathology Department. The potential savings from adopting a "useful BT profile"-only strategy was estimated at our institution from the yearly average number of individual patients submitted to coronary angiography due to ACS and the predicted number of four routine Cardiology appointments per patient in the first year post-ACS.
Results: A total of 65 answers were analyzed, 37% from Cardiology residents (n = 24) and 63% (n = 41) from consultant Cardiologists. Two incomplete answers were excluded. BT profiles were available across all centers, and 75% (n = 49) of the participants use them routinely. The results considering 'routinely useful' or 'routinely not useful' are presented in the Table. At our institution, the BT profile at hospital admission costs €126.36; if only useful BTs were prescribed, it would save €61.89 per admission – an estimated yearly saving of €21,661.50 for an average of 350 ACS admissions. For post-ACS routine appointments, the BT profile costs €48.07. The total cost of useful BTs in this setting is €22.90 - an estimated yearly saving of €35,238.00 assuming an average of 1,400 outpatient appointments per year for these 350 ACS patients.
Conclusions: BT profiles routinely used in our institution for ACS patients include several tests deemed as "not routinely useful" by a large proportion of cardiologists from nine different Portuguese hospitals. In these patients, routine prescription limited to the "routinely useful BTs" at hospital admission and outpatient appointments may lead to yearly savings up to €21,661.50 and €35,238.00, respectively. Confirmatory studies using an updated "useful" BT profile are in order to confirm these predicted savings.

PO 253. NT-PROBNP INAPPROPRIATE SHORT-TERM REPEAT TESTING IS ASSOCIATED WITH ELEVATED HEALTHCARE COSTS

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Introduction: NT-proBNP is an expensive laboratory marker used as a diagnosis and prognosis biomarker in heart failure (HF). In patients with acute decompensated HF (ADHF), it can be useful at admission and at discharge, but repeated measurement over a short period of time is inappropriate and associated with unnecessary costs. The aims of this study were to (i) determine the prevalence of inappropriate use of NT-proBNP in the hospital setting and (ii) estimate the savings associated with the implementation of a rule to avoid inappropriate testing.
Methods: We conducted a retrospective single-center study between January 1st and December 31st 2019. Clinicians from our center have an unrestricted access to NT-proBNP testing. We collected data regarding NT-proBNP testing from the Clinical Pathology department. NT-proBNP test cost was recorded and admissions for ADHF were identified using ICD-9 coding. We chose an NT-proBNP re-testing period cut-off of ≤ 5 days as inappropriate as this was substantially inferior to the median hospital stay for HF.
Results: 2,459 patients with a diagnosis of ADHF were evaluated at our institution during a 12-month period: 1,782 were admitted for in-hospital management and 677 patients were discharged after assessment in the emergency department. The median length-of-stay was 8.5 (5.9-16.2) days. In the same period, 11,253 NTproBNP tests were performed in both inpatient and outpatient settings, with a median value of 1,496 (353-4.931) pg/mL. The number of patients who had a repeat NT-proBNP test during 2019 was 7,331, with a median retest interval of 30 (5-89) days. Inappropriate testing occurred in 1,354 patients (55.1% of total). Considering a cost of €29.60 per test, €40,078.40 could have been saved from avoiding inappropriate NT-proBNP retesting.
Conclusions: To the best of our knowledge, this is the first Portuguese study to assess the prevalence of inappropriate NT-proBNP retesting. Inappropriate NT-proBNP retesting happened in over half of the HF patients. Implementing a mechanism to reduce or avoid inappropriate NT-proBNP retesting could have a significant impact in budget savings, particularly in high-volume hospitals.

Virtual Posters | Posters - O. Basic Science

PO 254. CHARACTERIZATION OF PLASMA ACYLCARNITINES IN OBESE PATIENTS WITH SEVERE AORTIC STENOSIS

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Energy metabolism is central to cardiac health and disease. High adenosine triphosphate (ATP) turnover is required to maintain contractile function. Recently, dysregulation of fatty acid oxidation, reflected in acylcarnitines' plasma levels, has been recognized as an important player of obesity pathophysiology. The aim of the present study was to characterize the acylcarnitines profile in coronary sinus blood aortic stenosis (AS) patients throughout a spectrum of obesity. In a cohort of patients with severe AS, plasma acylcarnitines were determined in 14 obese and 18 non-obese fasting patients by the standard method of butylation and analysis by tandem mass spectrometry (MS/MS). Afterwards, we examined their association with adiposity parameters and cardiac function parameters. Obese patients showed a different spectrum of short-, medium- and long-chain acylcarnitines preference compared to non-obese. The levels of total medium-chain acylcarnitines were markedly elevated, representing its decreased utilization. Subsequently, we correlated the significantly higher acylcarnitines with body mass index (BMI) and visceral fat volumes. Free carnitine levels (C0), C2, C3DC, C4, C6DC, C8, C10:1 C10:2, C14:2 and C16:1 acylcarnitines are correlated with BMI and other adiposity parameters, but not with epicardial adipose tissue volume. The BMI-related acylcarnitines correlated with cardiac alterations and revealed that C0, C2, C10:1, C14:2 and C16:1 acylcarnitine levels were associated with cardiac parameters. For instance, long-chain acylcarnitine C16:1 levels were inversely correlated with heart rate (HR, r = -0.602), left ventricle ejection fraction (LVEF, r = -0.806), left ventricle mass index (LVMI, r = -0.504), left ventricular end-diastolic diameter (LVEDD, r = -0.527) and left atrial volume index (LAVI, r = -0.530). In conclusion, obese patients displayed an impairment of mitochondrial oxidation of fatty acids. Epicardial adipose tissue does not influence cardiac energy metabolism, revealing its neutral role in AS. Plasma acylcarnitine content change throughout a spectrum of obesity and their levels reflect AS severity. Long-chain acylcarnitine C16:1 level in coronary sinus blood correlate with worst cardiac function and structure.

PO 255. PLASMA KINESIS AND PROGNOSTIC IMPACT OF CRP IN STEMI PATIENTS

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Introduction: Patients with ST segment elevation myocardial infarction (STEMI) frequently show a rise in core temperature along with inflammatory markers in the days following the acute event. Contrary to myocardial troponins, which are present In the intracellular apparatus, C-reactive protein (CRP) is a penthraxin synthesized in response to inflammation or infection with an important extracellular component. Knowledge about CRP biological kinesis in STEMI patients and its prognostic significance might avoid inappropriate wasting of medical resources – namely increase in hospital and coronary intensive care unit (CICU) days, along with futile antimicrobial prescription.
Objectives: Evaluate the plasma kinesis and prognostic impact of CRP in STEMI patients.
Methods: Retrospective single center analysis of 98 consecutively included STEMI patients admitted to the CICU between January and June 2018. Patients with chronic inflammatory diseases, cancer, inward stay < 48 hours, Killip Kimball class IV at admission and those that didn't have daily CRP and Troponin T HS assessment for the first 72 in-hospital hours were excluded, n = 29. Demographic and clinical data was evaluated. CRP and Troponina T Hs plasma levels were assessed, as were the prescription of antibiotics without positive cultures or clear evidence of infection. In-Hospital mortality

Table 1 PO 255
CRP(Mg/dL) and troponin T HS(ng/L) progression

Estatísticas													
		PCR1	PCR2	PCR3	PCR4	PCR5	PCR6	Trop1	Trop2	Trop3	Trop4	Trop5	Trop6
N	Válido	69	69	69	69	62	57	69	69	69	69	65	60
	Omisso	0	0	0	0	7	12	0	0	0	0	4	9
Média		1,14	1,57	2,98	4,74	5,52	4,07	702,79	4.183,24	3.451,26	2.573,27	2.253,05	1.694,77
Mediana		0,49	0,73	1,62	2,94	2,78	1,78	92,00	2.817,00	2.467,00	1.920,00	1.968,00	1.069,00

Table 2 PO 255
Relation between CPR concentration and in-hospital mortality

		Teste de Levene para igualdade de variâncias		teste-t para Igualdade de Médias	
		F	Sig.	t	gl
PCR_DIA1	Variâncias iguais assumidas	12,391	0,001	-2,838	68
	Variâncias iguais não assumidas			-1,052	2,019
PCR_DIA2	Variâncias iguais assumidas	5,955	0,017	-4,339	68
	Variâncias iguais não assumidas			-1,874	2,028
PCR_DIA3	Variâncias iguais assumidas	0,185	0,668	-4,591	68
	Variâncias iguais não assumidas			-6,876	1,148
PCR_DIA4	Variâncias iguais assumidas	1,421	0,238	-5,044	68
	Variâncias iguais não assumidas			-25,890	23,803
PCR_DIA5	Variâncias iguais assumidas	1,418	0,239	-3,700	68
	Variâncias iguais não assumidas			-18,946	51,886
PCR_DIA6	Variâncias iguais assumidas	1,678	0,202	-2,715	61
	Variâncias iguais não assumidas			-1,481	1,024

was assessed. An independent sample t test was used to assess CRP value differences between groups based on in-hospital mortality.
Results: A total of 69 patients were included, mean age 64.8 (± 13.2 years). Antibiotics were administered in 9 patients (12.7%). As for the prevalence of cardiovascular risk factors: Obesity (IMC > 30) 17.3%; *diabetes mellitus* 33.3%, tobacco smoking 46.4%, Dyslipidemia 49.2%; Hypertension 60.8%. AF was present in 13%. The peak troponin T HS levels were reached 24 hours after the acute event, while the peak CRP plasma concentration was reached in the 5th inward day (Table 1). CRP levels show a positive relation to in-hospital mortality for the first 48 hours (Day 1: F = 12.391; p = 0.001/ Day 2 F = 5.955 p = 0.017), having non-statistically significant impact in the following measuments, up to the 6th day (Table 2).
Conclusions: First and second day CRP values have a statistically significant relation to in-hospital mortality in STEMI patients. The average peak CRP plasma concentration in this population was seen in the 5th day, which may correspond to the normal inflammatory response.

Virtual Posters | Posters - P. Other

PO 256. NORMAL VALUES OF THE ELECTROCARDIOGRAM IN ANGOLANS

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Introduction: Studies on the normal electrocardiogram limits in African populations are limited, especially in sub-Saharan Africa. There is no literature describing normal ECG limits in Angolans.
Objectives: The aim of this study is to establish the normal ECG values for adult Angolans, without established heart disease, stratified by gender and age.
Methods: A cross-sectional study was performed, involving 2 179 participants from a population in northern Angola, without established heart disease, aged between 15 and 74 years. A 12-lead ECG and a rhythm strip were recorded for all participants and analysed and processed by the University of Glasgow software and encoded by the Minnesota Code. The normal range of the electrocardiographic parameters were established as the 2nd and 98th percentiles of the measurement distribution per age group and gender. GAMLSS models were used to obtain the continuous age-dependent percentile curves.
Results: Medians were different between men and women: Heart rate 66 *vs* 74 bpm, P wave 108 *vs* 108 ms, PRI 152 *vs* 152 ms, QRS duration 90 vs 85 ms, QTI 376 vs 378 ms, QTIc (Hodges) 392 *vs*. 404 ms, QTIc (Bazett) 401 *vs*. 418 ms, QTIc (Fridericia) 392 *vs*. 404 ms, QTIc (Framingham) 393 *vs*. 404 ms, P-wave axes 63 *vs* 59º, QRS axes 51 *vs* 48º, T-wave axes 45 *vs* 41º, Sokolow-Lyon index 3.86 vs 2.87 mV and Cornell index 1.27 vs 0.930 mV.
Conclusions: The values described for the electrocardiographic measurements analyzed can be used as a reference for Angolan adults without established heart disease. Our study suggests that the normal limits of most ECG parameters vary over time and that the diagnostic criteria for the ECG must be specific for age and sex.

PO 257. HEMODYNAMIC AND AUTONOMIC NERVOUS SYSTEM (ANS) OUTPUT CHANGES AFTER BARIATRIC SURGERY

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Introduction: Obesity is a well-recognized cardiovascular risk factor. However, whether its effects are mediated by overload and hemodynamic strain and/or autonomic nervous system (ANS) imbalance, is not yet completely understood.
Objectives: The purpose of the present study is to investigate the effects of laparoscopic sleeve gastrectomy (LSG) on arterial strain/stiffness and variables dependent on ANS imbalance in subjects with severe or morbid obesity.

Variables	0 M	6 M	p value
PWV (m/s)	7 ± 1.6	6,9 ± 1.6	0.775
Mean Heart Rate (24h) (bpm)	79 ± 9.5	69 ± 11	< 0.0001
SDNN	121 ± 29	151 ± 26	< 0.0001
Leg-Arm Index	1.1 ± 0.17	1.3 ± 0,23	0.032
Systolic Blood Pressure (mmHg)	142 ± 17	118 ± 14	<0.0001
Diastolic Blood Pressure (mmHg)	82 ± 10	74 ± 11	0.027

Weight loss at 6M only had correlation with the systolic blood pressure (r=0.58, p=0,029).

PO 257 Figure

Methods: Fourteen female patients undergoing LSG for standard indications were enrolled. All subjects underwent a physical examination with biometric evaluation, pulsed Doppler to assess carotid-femoral pulse wave velocity (PWV), and 24h Holter to measure mean heart rate and SDNN (standard deviation normal-to-normal intervals), before surgery (0M) and 6 months post-operatively (6M). Values are presented as the mean with standard deviation. Pre-and postoperative time points were compared using a paired t-test.
Results: The mean weight at 0M was 103.5 ± 11.5 Kg and 74.5 ± 9 kg at 6M (p < 0.0001), fat mass 45 ± 5.7% before and 33.5 ± 7.8% at 6M. Arterial strain/stiffness and ANS dependent variables are presented in the Table. Weight loss at 6M only had correlation with the systolic blood pressure (r = 0.58, p = 0.029).
Conclusions: After LSG, the changes in systolic and diastolic blood pressure as well as in leg-arm index suggest a correction in the amount of strain imposed in arterial pool, and the increment of the SDNN indicate an increase of vago-sympathetic balance. Both improvements that cannot be exclusively attributed to the weight loss.

PO 258. LONG-TERM EXPERIENCE OF NON-VITAMIN K ORAL ANTICOAGULANTS IN ELDERLY PATIENTS WITH ATRIAL FIBRILLATION

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Introduction: Current guidelines recommend non-vitamin-K oral anticoagulants (NOACs) as the mainstay for stroke prevention in patients (P) with nonvalvular atrial fibrillation (AF). Appropriate NOAC treatment in very elderly P with AF is challenging because of concerns regarding frailty and bleeding complications.
Objectives: To evaluate the experience with use of NOACs in a large elderly population from a dedicated NOAC clinic.
Methods: A single-centre prospective study was conducted among all P with AF followed in a dedicated NOAC clinic from a tertiary hospital between 2017 and 2020. P with ≥ 75 years of age were considered as very elderly.
Results: A total of 418P (age 77.9 ± 10.3 years, 54.5% male, mean CHA2DS2-VASc score 3.9 ± 1.4) were enrolled, with a mean follow-up of 51.2 ± 35.7 months. There were 289P (69.1%) with ≥ 75 years of age with a mean CHA2DS2-VASc score of 4.3 ± 1.2, of which 102P (24.5%) were ≥ 75 years. During follow-up, 30P experienced a minor hemorrhagic event (80% with ≥ 75 years) and 15P a major hemorrhagic event (73.3% with ≥ 75 years). There were 36 deaths, the majority (94%) in patients who were ≥ 75 years. A total of 11P had a stroke/systemic embolism (91% with ≥ 75 years). There was a total of 59 all-cause hospital admissions, all of which in the very elderly group. Temporary NOAC cessation was required in 87P (21%), mostly due to planned/unplanned surgical interventions and endoscopic procedures. According to renal function, weight and age, a discrepancy was observed in dosing regarding pharmacological recommendations in 4% of the P.
Conclusions: This report on real-world long-term clinical experience with NOACs found to be safe and efficacious among high-risk elderly patients. A structured follow-up, with judicious prescribing and regular monitoring of renal function and drug compliance, could help reduce potential complications.

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