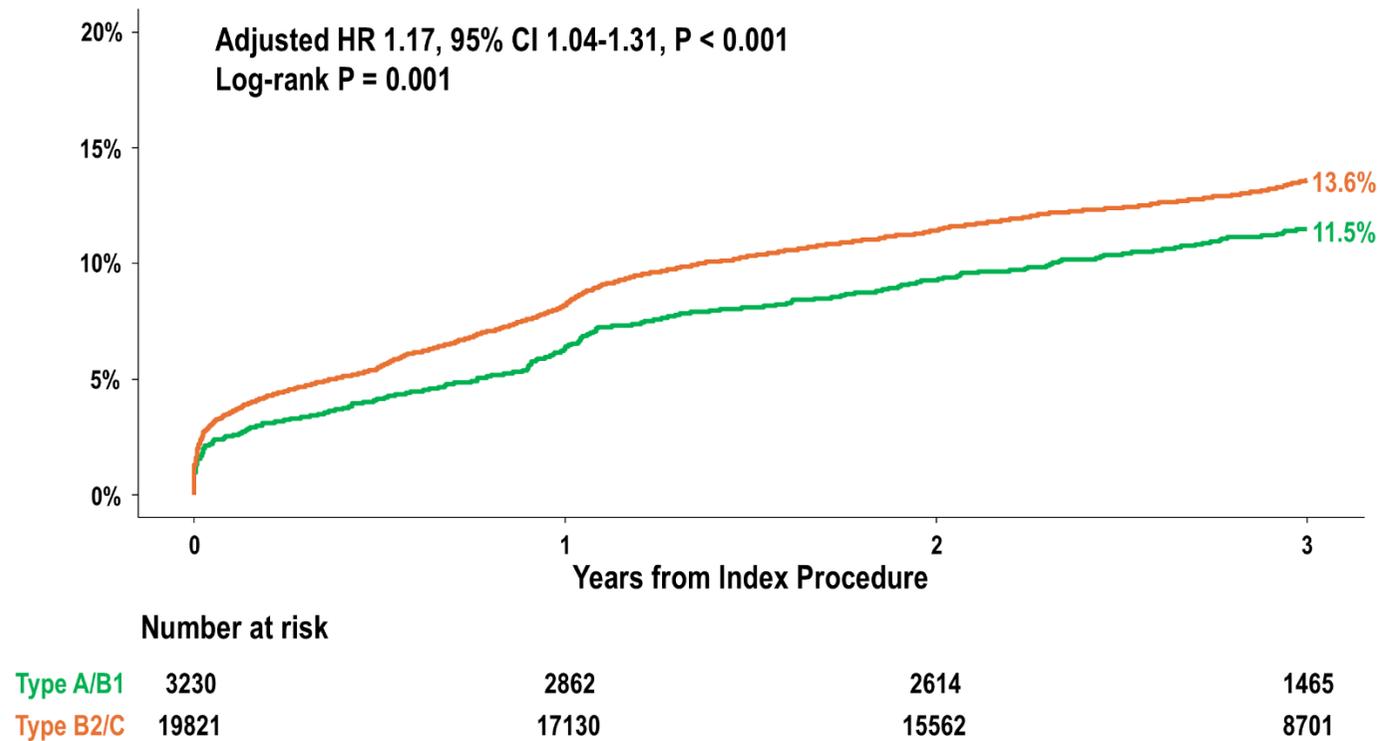


## **SUPPLEMENTARY DATA**

### **Intravascular imaging-guided percutaneous coronary intervention for acute myocardial infarction according to the ACC/AHA lesion classification**

**Figure S1.** Clinical outcomes according to the ACC/AHA lesion classifications in patients with acute myocardial infarction



Kaplan-Meier curve for comparison of MACE (a composite of cardiac death, MI, repeat revascularization, and stent thrombosis) at 3 years between patients who underwent PCI for MI with type A/B1 lesions and those with type B2/C lesions.

ACC/AHA, American College of Cardiology/American Heart Association; CI, confidence interval; HR, hazard ratio; IVI, MACE, major adverse cardiac event; MI, myocardial infarction; PCI, percutaneous coronary intervention.

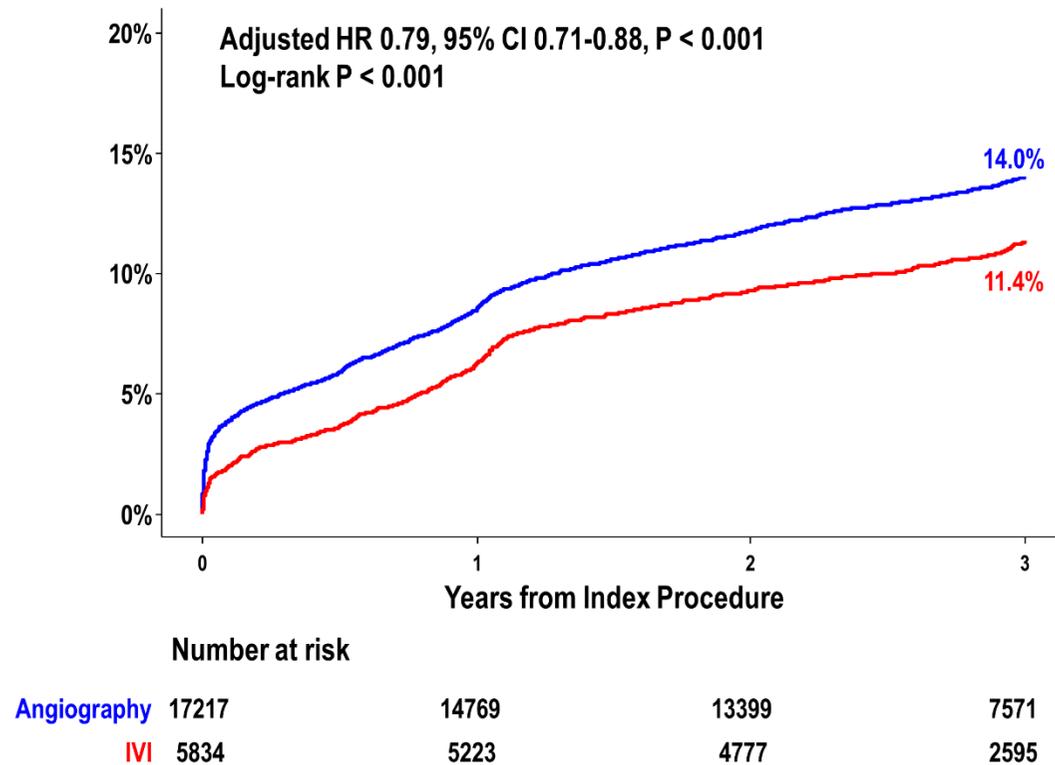
Correcciones a la figura:

Cerrar 95%CI

Indicar valor de P en formato REC:  $P < .001$  y  $P = .001$

Normalizar mayúsculas: Years from index procedure

**Figure S2. Clinical outcomes between IVI-guided PCI and angiography-guided PCI in patients with acute MI**



Kaplan-Meier curve for comparison of MACE (a composite of cardiac death, MI, repeat revascularization, and stent thrombosis) at 3 years between IVI-guided and angiography-guided PCI in patients with acute MI.

CI, confidence interval; HR, hazard ratio; IVI, MACE, major adverse cardiac event; MI, myocardial infarction; PCI, percutaneous coronary intervention.

Cerrar 95%CI

Indicar valor de P en formato REC:  $P < .001$  y  $P = .001$

Normalizar mayúsculas: Years from index procedure

**Table S1.** Standardized differences of variables used in IPW adjustment for baseline characteristics according to the ACC/AHA lesion classification and intravascular imaging-guided PCI

Characteristics	Unadjusted SMD		IPW-adjusted SMD	
	Angiography-guided for A/B1 vs IVI-guided for A/B1	Angiography-guided for B2/C vs. IVI-guided for B2/C	Angiography-guided for A/B1 vs IVI-guided for A/B1	Angiography-guided for B2/C vs IVI-guided for B2/C
<i>Demographic characteristics</i>				
Age, y	6.1	11.0	2.6	3.2
Male, %	1.0	10.1	4.3	4.5
BMI, kg/m <sup>2</sup>	8.6	4.4	6.8	0.5
Corresponding registry	11.6	24.9	3.1	5.6
<i>Cardiovascular risk factors</i>				
Hypertension	12.1	7.6	8.2	3.2
Smoking	1.6	7.6	0.9	2.5
Previous history of MI	3.9	5.7	3.3	0.5
<i>Initial clinical manifestation</i>				
STEMI	24.1	16.0	2.4	5.3
LVEF, %	16.3	5.0	0.3	1.0
SBP, mmHg	5.1	8.6	6.3	2.1
DBP, mmHg	1.0	6.5	5.2	0.6
<i>Laboratory results</i>				
Hemoglobin	3.1	6.5	6.0	2.0
Low density lipoprotein	17.7	25.2	6.6	4.0
CK-MB	7.2	5.0	3.9	1.1

Troponin I	10.3	13.7	6.6	1.6
<i>Discharge medications</i>				
Aspirin	3.4	0.9	2.7	1.3
Clopidogrel	11.9	13.2	4.4	3.5
Statin	12.7	10.9	7.4	5.8
RAAS blocker	16.3	11.7	2.4	3.6
Calcium channel blocker	6.2	3.4	1.1	2.7
<i>Lesion characteristics</i>				
Left main disease	37.3	31.9	9.6	5.9
Culprit vessel	0.1	3.8	5.3	0.4
Pre-PCI TIMI flow	34.7	20.4	5.3	4.5
<i>Procedural characteristics</i>				
Success of PCI	3.7	4.1	0.1	1.5
Complete revascularization	0.3	19.7	3.3	4.6
Multivessel PCI	18.2	16.1	7.4	3.7
Trans-radial approach	39.2	25.8	7.1	6.1
Thrombus aspiration	5.7	7.5	6.3	1.4
GP IIb/IIIa inhibitors	5.6	15.8	1.5	3.9
ECMO	3.8	1.5	7.3	0.8
IABP	1.6	1.2	1.6	2.0

ACC/AHA, American College of Cardiology and American Heart Association; BMI, body mass index; CK-MB, creatine kinase-MB; DBP, diastolic blood pressure; ECMO, extracorporeal membrane oxygenation; IABP, intra-aortic balloon pump; IVI, intravascular imaging; LVEF, left ventricular ejection fraction; MI, myocardial infarction; PCI, percutaneous coronary intervention; RAAS, renin-angiotensin-aldosterone system; SBP, systolic blood pressure; SMD, standardized mean difference; STEMI, ST elevation myocardial infarction; TIMI, Thrombolysis in Myocardial Infarction.

**Table S2.** Baseline characteristics according to ACC/AHA lesion classification in patients with acute myocardial infarction

Characteristics	ACC/AHA classification type A/B1 (n = 3230)	ACC/AHA classification type B2/C (n = 19 821)	<i>P</i>
<b>Demographic characteristics</b>			
<i>Age, y</i>	63.0 ± 11.9	63.8 ± 12.4	.001
<i>Male, %</i>	2514 (77.8)	15261 (77.0)	.303
<i>BMI, kg/m<sup>2</sup></i>	24.1 ± 3.3	24.2 ± 3.4	.169
<b>Cardiovascular risk factors</b>			
<i>Hypertension</i>	1545 (47.8)	9877 (49.8)	.037
<i>Diabetes mellitus</i>	871 (27.0)	5518 (27.8)	.314
<i>Dyslipidemia</i>	447 (13.8)	2582 (13.0)	.215
<i>Smoking</i>	1765 (54.6)	11316 (57.1)	.010
<i>Previous history of MI</i>	178 (5.5)	1141 (5.8)	.605
<i>Previous history of HF</i>	35 (1.1)	233 (1.2)	.715
<i>Previous history of stroke</i>	181 (5.6)	1245 (6.3)	.154
<b>Initial clinical manifestation</b>			
<i>Clinical presentation</i>			< .001
NSTEMI	1818 (56.3)	9446 (47.7)	
STEMI	1412 (43.7)	10375 (52.3)	
<i>LVEF, %</i>	53.3 ± 10.7	51.9 ± 10.9	< .001
<i>SBP, mmHg</i>	134.5 ± 27.9	130.7 ± 28.6	< .001
<i>DBP, mmHg</i>	81.1 ± 17.2	78.9 ± 17.4	< .001
<i>Heart rate, beats/minute</i>	78.8 ± 18.2	78.6 ± 19.2	.523
<b>Laboratory results</b>			
<i>Hemoglobin</i>	14.1 ± 2.0	13.9 ± 2.1	.005
<i>Creatinine</i>	0.9 [0.8, 1.1]	0.9 [0.8, 1.1]	.171
<i>Low density lipoprotein</i>	63.0 [42.7, 111.0]	62.0 [41.0, 112.0]	.041
<i>CK-MB</i>	30.9 [6.9, 120.5]	59.2 [12.3, 193.1]	< .001
<i>Troponin I</i>	11.1 [1.7, 40.0]	22.0 [3.8, 52.5]	< .001
<i>NTproBNP</i>	223.0 [55.3, 932.0]	284.9 [67.3, 1387.0]	< .001
<b>Discharge medications</b>			

<i>Aspirin</i>	3216 (99.6)	19710 (99.4)	.436
<i>P2Y12 inhibitor</i>	3216 (99.6)	19698 (99.4)	.272
Clpidogrel	2153 (66.7)	12856 (64.9)	.049
Prasugrel	267 (8.3)	2097 (10.6)	< .001
Ticagrelor	1199 (37.1)	8030 (40.5)	< .001
<i>Statin</i>	3025 (93.7)	18489 (93.3)	.453
<i>Beta-blocker</i>	2477 (76.7)	15927 (80.4)	< .001
<i>RAAS blocker</i>	2402 (74.4)	15203 (76.7)	.004
<i>Calcium channel blocker</i>	246 (7.6)	1289 (6.5)	.021
<i>Oral anticoagulants</i>	98 (3.0)	664 (3.3)	.380

ACC/AHA, American College of Cardiology and American Heart Association; BMI, body mass index; CK-MB, creatine kinase-MB; DBP, diastolic blood pressure; HF, heart failure; IVI, intravascular imaging; LVEF, left ventricular ejection fraction; MI, myocardial infarction; NSTEMI, non-ST-elevation myocardial infarction; NT-proBNP, N-terminal pro-brain natriuretic peptide; PCI, percutaneous coronary intervention; RAAS, renin-angiotensin-aldosterone system; SBP, systolic blood pressure; STEMI, ST elevation myocardial infarction.

Values are presented as mean ± standard deviation, median [Q1-Q3], or No. (%).

**Table S3.** Baseline lesion and procedural characteristics according to the ACC/AHA lesion classification in patients with acute myocardial infarction

Characteristics	ACC/AHA classification type A/B1 (n = 3230)	ACC/AHA classification type B2/C (n = 19 821)	P
<b>Lesion characteristics</b>			
<i>Number of diseased vessels</i>			< .001
1-vessel disease	1683 (52.1)	9054 (45.7)	
Multivessel disease	1547 (47.9)	10767 (54.3)	< .001
2-vessel disease	998 (30.9)	6584 (33.2)	
3-vessel disease	549 (17.0)	4183 (21.1)	
<i>Left main disease</i>	158 (4.9)	1094 (5.5)	.156
<i>Culprit vessel</i>			< .001
LAD	1492 (46.2)	9443 (47.6)	
LCX	713 (22.1)	3264 (16.5)	
RCA	941 (29.1)	6595 (33.3)	
LM	84 (2.6)	519 (2.6)	
<i>ACC/AHA classification</i>			NA
A	437 (13.5)	0 (0)	
B1	2793 (86.5)	0 (0)	
B2	0 (0)	8039 (40.6)	
C	0 (0)	11782 (59.4)	
<i>Pre-PCI TIMI flow</i>			< .001
0	942 (29.2)	9630 (48.6)	
1	576 (17.9)	2171 (11.0)	
2	514 (15.9)	2875 (14.5)	
3	1193 (37.0)	5123 (25.9)	
<i>Post-PCI TIMI flow</i>			.426
0	2 (0.1)	14 (0.1)	
1	4 (0.1)	43 (0.2)	
2	76 (2.4)	542 (2.7)	
3	3148 (97.5)	19222 (97.0)	

<b>Procedural characteristics</b>			
<i>Success of PCI</i>	3212 (99.4)	19677 (99.3)	.340
<i>Complete revascularization</i>	2201 (68.1)	13113 (66.2)	< .001
<i>Multivessel PCI</i>	623 (19.3)	4668 (23.6)	< .001
<i>Trans-radial approach</i>	1350 (41.8)	9326 (47.1)	< .001
<i>IVI</i>	801 (24.8)	5033 (25.4)	.485
IVUS	716 (22.2)	4533 (22.9)	.390
OCT	85 (2.6)	500 (2.5)	.744
<i>Thrombus aspiration</i>	337 (10.4)	3881 (19.6)	< .001
<i>GP IIb/IIIa inhibitors</i>	187 (5.8)	2728 (13.8)	< .001
<i>Stents at culprit lesion</i>			
Number of stents	1.1 ± 0.3	1.2 ± 0.5	< .001
Mean diameter of stents	3.2 ± 0.5	3.1 ± 0.5	.001
Mean length of stents	22.9 ± 10.3	31.9 ± 15.3	< .001
<i>ECMO</i>	20 (0.6)	222 (1.1)	.013
<i>IABP</i>	38 (1.2)	427 (2.2)	< .001
<b>Periprocedural complications</b>			
<i>Cardiopulmonary resuscitation</i>	97 (3.0)	1152 (0.8)	< .001
<i>Cardiogenic shock</i>	120 (3.7)	1437 (7.2)	< .001
<i>Stroke</i>	9 (0.3)	103 (0.5)	.091
<i>Intracranial hemorrhage</i>	4 (0.1)	89 (4)	.011
<i>Ventricular tachycardia</i>	59 (1.8)	602 (3.0)	< .001
<i>Ventricular fibrillation</i>	37 (1.1)	418 (2.1)	< .001
<i>Atrial fibrillation</i>	56 (1.7)	616 (3.1)	< .001
<i>Acute kidney injury</i>	23 (0.7)	167 (0.8)	.512

ACC/AHA, American College of Cardiology and American Heart Association; ECMO, extracorporeal membrane oxygenation; IABP, intra-aortic balloon pump; IVI, intravascular imaging; IVUS, intravascular ultrasound; LAD, left anterior descending artery; LCX, left circumflex artery; LM, left main artery; OCT, optical coherence tomography; PCI, percutaneous coronary intervention; RCA, right coronary artery; TIMI, Thrombolysis in Myocardial Infarction.

Values are presented as mean ± standard deviation or No. (%).

**Table S4.** Clinical outcomes according to the ACC/AHA lesion classification in patients with acute myocardial infarction

Clinical outcomes	Type A/B1 (n = 3230)	Type B2/C (n = 19 821)	Multivariate analysis <sup>a</sup>		IPW-adjusted analysis <sup>b</sup>	
			Adjusted HR (95%CI)	<i>P</i>	Adjusted HR (95% CI)	<i>P</i>
MACE	348 (11.5)	2537 (13.6)	1.17 (1.04-1.31)	< .001	1.16 (1.02-1.34)	.030
Cardiac death	132 (4.3)	1056 (5.5)	1.14 (0.92-1.40)	.233	1.11 (0.87-1.43)	.386
Myocardial infarction	109 (2.1)	385 (2.6)	1.42 (1.03-1.95)	.033	1.18 (0.86-1.64)	.289
Repeat revascularization	217 (7.4)	1419 (8.1)	1.13 (0.95-1.34)	.158	1.15 (0.95-1.33)	.162
Stent thrombosis	25 (0.5)	101 (0.7)	1.18 (0.65-2.12)	.587	0.86 (0.48-1.55)	.621

ACC/AHA, American College of Cardiology and American Heart Association; CI, confidence interval; HR, hazard ratio; IPW, inverse probability weighting; IVI, intravascular imaging; MACE, major adverse cardiac event; MI, myocardial infarction; PCI, percutaneous coronary intervention; RAAS, renin-angiotensin-aldosterone system; TIMI, Thrombolysis in Myocardial Infarction.

<sup>a</sup> Adjusted variables included age, type of MI, systolic blood pressure, troponin I, clopidogrel, statin, and RAAS blocker as discharge medications, multivessel disease, left main disease, culprit vessel, ACC/AHA lesion classification, pre-PCI TIMI flow, multivessel PCI during index procedure, trans-radial approach, and thrombus aspiration.

<sup>b</sup> Adjusted variables included age, sex, body mass index, hypertension, smoking, previous history of MI, type of MI, left ventricular ejection fraction, systolic/diastolic blood pressure, hemoglobin, low-density lipoprotein, creatine kinase-MB, troponin I, aspirin, clopidogrel, statin, renin-angiotensin-aldosterone system blocker, calcium channel blocker, left main disease, culprit vessel, pre-PCI TIMI flow, successful PCI, complete revascularization, multivessel PCI during the index procedure, transradial approach, thrombus aspiration, glycoprotein IIb/IIIa inhibitor, extracorporeal membrane oxygenation, and intra-arterial balloon pump.