

SUPPLEMENTARY DATA

Table 1 of the supplementary data

Baseline characteristics of the study population according to nutritional status

Variable	Total population (n = 14 849)	Malnutrition			P for trend
		No (n = 9751)	Mild (n = 4306)	Moderate or severe (n = 792)	
Age, y	75.6 ± 10.3	74.5 ± 10.6	77.6 ± 9.1	78.8 ± 9.2	< .001
Female sex	7566 (51.0)	5096 (52.3)	2085 (48.4)	385 (48.6)	< .001
Weight, kg	78.5 ± 15.1	78.9 ± 15.1	77.9 ± 15.1	76.3 ± 15.1	< .001
BMI, kg/m ²	30.3 ± 4.8	30.4 ± 4.8	30.1 ± 4.9	29.7 ± 4.8	< .001
Current smoking	751 (5.1)	556 (5.7)	163 (3.8)	33 (4.2)	< .001
Alcohol	2862 (19.3)	1,921 (19.7)	785 (18.2)	158 (19.9)	.097
Cognitive impairment	1155 (7.8)	650 (6.7)	406 (9.4)	99 (12.5)	< .001
Paroxysmal AF	2499 (16.8)	1688 (17.3)	694 (16.1)	117 (14.8)	.059
Hypertension	10 702 (72.1)	6936 (71.1)	3202 (74.4)	564 (71.2)	< .001
Diabetes	2927 (19.7)	1713 (17.6)	1027 (23.9)	187 (23.6)	< .001
Dyslipidemia	7424 (50.0)	4901 (50.3)	2213 (51.4)	310 (39.1)	< .001
CAD	1568 (10.6)	794 (8.2)	658 (15.3)	116 (14.6)	< .001
PAD	531 (3.6)	279 (2.9)	202 (4.7)	50 (6.3)	< .001
Prior heart failure	1171 (7.9)	632 (6.5)	433 (10.1)	106 (13.4)	< .001
LVEF < 40%	810 (5.7)	431 (4.6)	306 (7.3)	73 (9.4)	< .001
Valvular heart disease	1436 (9.7)	797 (8.2)	512 (11.9)	127 (16.0)	< .001

Prior stroke	889 (6.0)	481 (4.9)	326 (7.6)	82 (10.4)	< .001
Prior bleeding	799 (5.4)	494 (5.1)	253 (5.9)	52 (6.6)	.047
History of cancer	1068 (7.2)	617 (6.3)	364 (8.4)	87 (11.0)	< .001
COPD	1729 (11.6)	1,071 (11.0)	542 (12.6)	116 (14.6)	.001
Liver disease	455 (3.1)	259 (2.7)	146 (3.4)	50 (6.3)	< .001
CrCl < 60 mL/min/1.73 m ²	4179 (28.1)	2315 (23.7)	1510 (35.1)	354 (44.7)	< .001
Anemia	2907 (19.6)	1230 (12.6)	1264 (29.4)	413 (52.1)	< .001
CHA ₂ DS ₂ -VASc, points	3.3 ± 1.5	3.1 ± 1.5	3.6 ± 1.4	3.7 ± 1.5	< .001
HAS-BLED, points	2.6 ± 1.2	2.5 ± 1.2	2.9 ± 1.2	3.2 ± 1.2	< .001
Anticoagulation	11 493 (77.4)	7458 (76.5)	3450 (80.1)	585 (73.9)	< .001
Antiplatelet therapy	2811 (18.9)	1713 (17.6)	891 (20.7)	207 (26.1)	< .001
Beta-blocker	6478 (43.6)	4224 (43.3)	1909 (44.4)	345 (43.6)	.522
Digoxin	1944 (13.1)	1261 (12.9)	4555 (12.9)	129 (16.3)	.023
RAS inhibitors	8120 (54.7)	5312 (54.5)	2417 (56.1)	391 (49.4)	.002

AF, atrial fibrillation; BMI, body mass index; CAD, coronary artery disease; CrCl, creatinine clearance; COPD, chronic obstructive pulmonary disease; LVEF, left ventricular ejection fraction; PAD, peripheral artery disease; RAS, renin-angiotensin system.

The data are expressed as No. (%) or mean ± standard deviation.

Table 2 of the supplementary data

Baseline characteristics of the study population according to body mass index

Variable	Body mass index				P for trend
	Underweight < 18.5 kg/m ² n = 27	Normal weight 18.5-24.9 kg/m ² n = 1648	Overweight 25-29.9 kg/m ² n = 6330	Obesity ≥ 30 kg/m ² n = 6844	
Age, y	79.2 ± 10.5	76.4 ± 12.0	77.3 ± 9.8	73.9 ± 9.9	< .001
Female sex	21 (77.8)	936 (56.8)	2897 (45.8)	3712 (54.2)	< .001
Weight, kg	44.9 ± 5.0	59.7 ± 8.4	73.0 ± 8.8	88.3 ± 13.9	< .001
Current smoking	4 (14.8)	139 (8.4)	288 (4.5)	329 (4.7)	< .001
Alcohol	2 (7.4)	231 (14.0)	1073 (17.0)	1556 (22.7)	< .001
Cognitive impairment	2 (7.4)	146 (8.9)	529 (8.4)	478 (7.0)	.009
Paroxysmal AF	9 (33.3)	306 (18.6)	1106 (17.5)	1078 (15.8)	.001
Hypertension	17 (63.0)	1033 (62.7)	4304 (68.0)	5348 (78.1)	< .001
Diabetes	4 (14.8)	225 (13.7)	1135 (17.9)	1563 (22.8)	< .001
Dyslipidemia	10 (37.0)	710 (43.1)	3035 (47.9)	3669 (53.6)	< .001
CAD	1 (3.7)	170 (10.3)	678 (10.7)	719 (10.5)	.654
PAD	2 (7.4)	77 (4.7)	245 (3.9)	207 (3.0)	.002
Prior heart failure	0 (0.0)	137 (8.3)	441 (7.0)	593 (8.7)	.001
LVEF < 40%	0 (0.0)	93 (5.9)	367 (6.0)	350 (5.3)	.244
Valvular heart disease	6 (22.2)	229 (13.9)	641 (10.1)	560 (8.2)	< .001
Prior stroke	2 (7.4)	106 (6.4)	421 (6.7)	360 (5.3)	.007
Prior bleeding	2 (7.4)	110 (6.7)	334 (5.3)	353 (5.2)	.092
History of cancer					

COPD	2 (7.4)	199 (12.1)	640 (10.1)	888 (13.0)	< .001
Liver disease	1 (3.7)	47 (2.9)	163 (2.6)	244 (3.6)	.011
CrCl < 60 mL/min/1.73 m ²	3 (11.1)	457 (27.7)	1867 (29.5)	1852 (27.1)	.003
Anemia	10 (37.0)	376 (22.8)	1328 (21.0)	1193 (17.4)	< .001
CONUT score, points	1.7 ± 1.7	1.5 ± 1.8	1.4 ± 1.7	1.3 ± 1.6	< .001
CHA ₂ DS ₂ -VASc, points	3.4 ± 1.6	3.2 ± 1.5	3.2 ± 1.5	3.3 ± 1.5	.913
HAS-BLED, points	2.7 ± 1.1	2.5 ± 1.2	2.6 ± 1.2	2.7 ± 1.2	.119
Anticoagulation	19 (70.4)	1209 (73.4)	4855 (76.7)	5410 (79.0)	< .001
Antiplatelet therapy	8 (29.6)	324 (19.7)	1246 (19.7)	1233 (18.0)	.034
Beta-blocker	13 (48.1)	664 (40.3)	2591 (40.9)	3210 (46.9)	< .001
Digoxin	9 (33.3)	271 (16.4)	878 (13.9)	786 (11.5)	< .001
RAS inhibitors	11 (40.7)	715 (43.4)	3129 (49.4)	4265 (62.3)	< .001

AF, atrial fibrillation; CAD, coronary artery disease; CrCl, creatinine clearance; COPD, chronic obstructive pulmonary disease; LVEF, left ventricular ejection fraction; PAD, peripheral artery disease; RAS, renin-angiotensin system.

The data are expressed as No. (%) or mean ± standard deviation.

Table 3 of the supplementary data

Multivariate analysis adjusted for age, sex, body mass index (BMI), CONUT score, CHA₂DS₂-VASc score, HAS-BLED score, Charlson comorbidity index, oral anticoagulation, and statin therapy

Event	Group	BMI (per 5 kg/m ²)			P for interaction
		Adjusted HR	95%CI	P	
All-cause mortality	Total population (n = 14 849)	0.97	0.93-1.01	.117	.435
	Good nutrition (n = 9751)	0.96	0.91-1.02	.175	
	Mild malnutrition (n = 4306)	1.00	0.94-1.07	.919	
	Moderate-severe malnutrition (n = 792)	0.87	0.76-0.99	.030	
Stroke/SEE	Total population (n = 14 849)	0.92	0.85-0.98	.015	.247
	Good nutrition (n = 9751)	0.95	0.86-1.04	.217	
	Mild malnutrition (n = 4306)	0.87	0.77-0.99	.039	
	Moderate-severe malnutrition (n = 792)	0.86	0.65-1.13	.274	
Bleeding	Total population (n = 14 849)	0.95	0.89-1.01	.086	0.645
	Good nutrition (n = 9751)	0.94	0.87-1.02	.163	
	Mild malnutrition (n = 4306)	0.97	0.88-1.07	.547	
	Moderate-severe malnutrition (n = 792)	0.86	0.69-1.09	.214	
Composite endpoint	Total population (n = 14 849)	0.98	0.95-1.01	.225	.170
	Good nutrition (n = 9751)	0.98	0.93-1.02	.292	
	Mild malnutrition (n = 4306)	1.00	0.95-1.06	.835	
	Moderate-severe malnutrition (n = 792)	0.89	0.80-1.00	.051	
Event	Group	CONUT (per 1 point)			
Mortality	Total population (n = 14 849)	1.17	1.15-1.19	< .001	.863
	Normal weight (n = 1648)	1.16	1.10-1.21	< .001	
	Overweight (n = 6330)	1.19	1.16-1.22	< .001	
	Obesity (n = 6844)	1.15	1.12-1.18	< .001	
Stroke/SEE	Total population (n = 14 849)	1.09	1.05-1.13	< .001	

	Normal weight (n = 1648)	1.08	0.97-1.21	.139	
	Overweight (n = 6330)	1.09	1.04-1.15	.001	.682
	Obesity (n = 6844)	1.08	1.02-1.15	.010	
	Total population (n = 14 849)	1.11	1.08-1.14	<.001	
Bleeding	Normal Weight (n = 1648)	1.04	0.95-1.14	.363	.816
	Overweight (n = 6330)	1.15	1.10-1.20	< .001	
	Obesity (n = 6844)	1.10	1.05-1.15	< .001	
	Total population (n = 14 849)	1.15	1.14-1.17	< .001	
Domposite endpoint	Normal weight (n = 1648)	1.13	1.08-1.18	< .001	
	Overweight (n = 6330)	1.17	1.15-1.20	< .001	.945
	Obesity (n = 6844)	1.14	1.11-1.17	< .001	

95%CI, 95% confidence interval; HR, hazard ratio.

Table 4 of the supplementary data

Multivariate analysis of the impact of body mass index (BMI) and CONUT score on all-cause mortality. Adjustment by age, sex, body mass index (BMI), CONUT score, CHA₂DS₂-VASc score, HAS-BLED score, Charlson comorbidity index, oral anticoagulation, and statin therapy

Group		All-cause mortality					
		BMI (per 5 kg/m ²)			CONUT score		
		Adjusted HR	95%CI	P	Adjusted HR	95%CI	P
Cognitive impairment	Yes (n = 1155)	0.99	0.90-1.11	.929	1.13	1.08-1.17	< .001
	No (n = 13 694)	0.97	0.93-1.02	.199	1.18	1.15-1.20	< .001
Prior stroke	Yes (n = 889)	0.87	0.74-1.02	.096	1.13	1.06-1.20	< .001
	No (n = 13 960)	0.97	0.93-1.01	.140	1.18	1.16-1.20	< .001
Prior heart failure	Yes (n = 1171)	0.87	0.78-0.97	.011	1.16	1.11-1.22	< .001
	No (n = 13 678)	0.98	0.94-1.02	.356	1.17	1.15-1.19	< .001
LVEF*	≤ 40% (n = 810)	0.89	0.77-1.03	.129	1.10	1.04-1.16	< .001
	> 40% (n = 13 521)	0.98	0.94-1.02	.320	1.17	1.15-1.19	< .001
COPD	Yes (n = 1729)	0.92	0.83-1.02	.122	1.15	1.10-1.20	< .001
	No (n = 13 120)	0.98	0.94-1.02	.332	1.18	1.15-1.20	< .001
Cancer	Yes (n = 1068)	1.00	0.92-1.09	.962	1.13	1.09-1.17	< .001
	No (n = 13 781)	0.96	0.92-1.01	.123	1.18	1.16-1.20	< .001
Beta-blocker	Yes (n = 6478)	0.98	0.92-1.05	.553	1.15	1.12-1.19	< .001
	No (n = 8371)	0.96	0.91-1.01	.141	1.18	1.16-1.21	< .001
RAS inhibitor	Yes (n = 8120)	0.96	0.91-1.02	.162	1.17	1.14-1.20	< .001
	No (n = 6729)	0.99	0.93-1.04	.540	1.17	1.15-1.20	< .001
Statin	Yes (n = 6481)	1.00	0.94-1.07	.992	1.16	1.13-1.20	< .001
	No (n = 8368)	0.95	0.90-1.00	.049	1.18	1.15-1.20	< .001
Aspirin	Yes (n = 2811)	0.95	0.87-1.04	.264	1.17	1.13-1.21	< .001
	No (n = 12 038)	0.97	0.93-1.02	.215	1.17	1.15-1.20	< .001

Anticoagulation	Yes (n = 11 493)	0.96	0.92-1.01	.113	1.17	1.15-1.19	< .001
	No (n = 3356)	0.98	0.90-1.06	.587	1.18	1.14-1.21	< .001
Type of OAC	VKA (n = 9879)	0.96	0.91-1.01	.099	1.16	1.14-1.19	< .001
	DOAC (n = 1440)	1.04	0.92-1.17	.578	1.14	1.09-1.21	< .001

95%CI, 95% confidence interval; COPD, chronic obstructive pulmonary disease; DOAC, direct oral anticoagulants; HR, hazard ratio; LVEF, left ventricular ejection fraction; OAC, oral anticoagulation; RAS, renin-angiotensin system; VKA, vitamin K antagonists

* 518 patients without data on LVEF.

Table 5 of the supplementary data

Multivariate analysis of the impact of body mass index (BMI) and CONUT score on the combined endpoint of mortality, embolism, and bleeding events. Adjustment by age, sex, body mass index (BMI), CONUT score, CHA₂DS₂-VASc score, HAS-BLED score, Charlson comorbidity index, oral anticoagulation, and statin therapy

Group		Composite endpoint					
		BMI (per 5 kg/m ²)			CONUT score		
		Adjusted HR	95%CI	P	Adjusted HR	95%CI	P
Cognitive impairment	Yes (n = 1155)	1.02	0.93-1.12	.694	1.11	1.07-1.15	< .001
	No (n = 13 694)	0.98	0.95-1.91	.257	1.16	1.14-1.18	< .001
Prior stroke	Yes (n = 889)	0.96	0.85-1.10	.590	1.11	1.05-1.16	< .001
	No (n = 13 960)	0.98	0.94-1.01	.178	1.16	1.14-1.18	< .001
Prior heart failure	Yes (n = 1171)	0.89	0.81-0.98	.015	1.14	1.10-1.20	< .001
	No (n = 13 678)	0.99	0.95-1.02	.536	1.15	1.13-1.17	< .001
LVEF*	≤ 40% (n = 810)	1.02	0.84-1.24	.870	1.28	1.16-1.41	< .001
	> 40% (n = 13 521)	0.88	0.77-1.01	.065	1.09	1.03-1.15	.002
COPD	Yes (n = 1729)	0.93	0.85-1.02	.123	1.14	1.10-1.19	< .001
	No (n = 13 120)	0.99	0.96-1.03	.627	1.15	1.13-1.17	< .001
Cancer	Yes (n = 1068)	0.99	0.92-1.07	.817	1.10	1.07-1.14	< .001
	No (n = 13 781)	0.98	0.94-1.02	.254	1.16	1.14-1.18	< .001
Beta-blocker	Yes (n = 6478)	0.98	0.93-1.03	.460	1.13	1.11-1.16	< .001
	No (n = 8371)	0.98	0.94-1.02	.0330	1.17	1.14-1.19	< .001
RAS inhibitor	Yes (n = 8120)	0.97	0.92-1.01	.150	1.15	1.13-1.18	< .001
	No (n = 6729)	1.00	0.95-1.05	.883	1.15	1.13-1.18	< .001
Statin	Yes (n = 6481)	1.01	0.96-1.06	.696	1.15	1.12-1.18	< .001
	No (n = 8368)	0.96	0.92-0.99	.048	1.16	1.13-1.18	< .001
Aspirin	Yes (n = 2811)	0.99	0.92-1.07	.883	1.15	1.12-1.19	< .001
	No (n = 12 038)	0.98	0.94-1.01	.205	1.15	1.13-1.17	< .001

Anticoagulation	Yes (n = 11 493)	0.96	0.93-1.00	.062	1.15	1.13-1.17	< .001
	No (n = 3356)	1.02	0.95-1.10	.495	1.15	1.12-1.18	< .001
Type of OAC	VKA (n = 9879)	0.96	0.93-1.00	.084	1.15	1.13-1.17	< .001
	DOAC (n = 1440)	0.99	0.89-1.11	.949	1.14	1.09-1.20	< .001

95%CI, 95% confidence interval; COPD, chronic obstructive pulmonary disease; DOAC, direct oral anticoagulants; HR, hazard ratio; LVEF, left ventricular ejection fraction; OAC, oral anticoagulation; RAS, renin-angiotensin system; VKA, vitamin K antagonists.

* 518 patients without data on LVEF.

Table 6 of the supplementary data

Multivariate analysis after adjustment by age, sex, body mass index (BMI), moderate-severe malnutrition, CHA₂DS₂-VASc score, HAS-BLED score, Charlson comorbidity index, oral anticoagulation, and statin therapy

Event	BMI (per 5 kg/m ²)			Moderate-severe malnutrición		
	Adjusted HR	95%CI	<i>P</i>	Adjusted HR	95%CI	<i>P</i>
All-cause mortality	0.99	0.92-1.01	.057	2.12	1.90-2.37	< .001
Stroke/SEE	0.91	0.85-0.98	.012	1.62	1.26-2.09	< .001
Bleeding	0.95	0.89-1.00	.063	1.65	1.34-2.04	< .001
Composite endpoint	0.97	0.94-1.01	.108	2.03	1.83-2.25	< .001

95%CI, 95% confidence interval; HR, hazard ratio.

Figure 1 of the supplementary data

Flow chart of study population.

