

PREDICTORS OF NEW-ONSET ATRIAL FIBRILLATION DURING ACUTE CORONARY SYNDROMES

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BACKGROUND: New-onset Atrial fibrillation (AF) frequently complicates acute coronary syndromes (ACS).

AIM: To assess predictors of new-onset AF during ACS and to evaluate the impact of new-onset AF during hospitalization.

METHODS AND RESULTS:

Retrospective observational cohort study

3241 patients with ACS
6-year period
12-months follow-up



364 AF
11.2%

230 (63.2%) with new-onset AF

134 (36.8%) with pre-existing AF

Table 1. Baseline characteristics of the study population according to the presence of new-onset AF.

BASILINE CHARACTERISTICS	Without AF (n=2877)	New-onset AF (n=230)	p-value
DEMOGRAPHICS			
Age (years), mean ±SD	62.5±12.9	73.02 ±11.6	p<0.001
Male, n(%)	2256(78.4)	160(69.6)	p=0.02
BMI (kg/m ²), median±IQR	27.0 ±4.7	26.4 ±4.8	p=0.323
CV RISK FACTOS			
Hypertension, n(%)	1734(60.3)	172(74.8)	p<0.001
Mellitus diabetes, n(%)	815(28.4)	83(36.1)	p=0.013
Dyslipidemia, n(%)	1558(58.8)	126(58.9)	p=0.975
Smoking habits, n(%)	1529(53.1)	82(35.7)	p<0.001
COMORBIDITIES			
Previous MI, n(%)	434(15.1)	40(17.5)	p=0.34
Previous PCI, n(%)	291(10.1)	22(9.6)	p=0.797
Previous CABG, n(%)	106(3.7)	20(8.7)	p<0.001
Valvular disease, n(%)	52(1.8)	13(5.7)	p<0.001
Previous Stroke, n(%)	168(5.8)	22(9.6)	p=0.024
PAD, n(%)	94(3.3)	11(4.8)	p=0.223
Renal failure, n(%)	91(3.2)	17(7.4)	p=0.001
COPD, n(%)	117(4.1)	11(4.8)	p=0.603
CLINICAL PRESENTATION			
STEMI, n(%)	1191(41.4)	129(56.1)	p<0.001
Killip Class≥3, n(%)	146(5.1)	29(12.6)	p<0.001
BLOOD TESTS			
Peak Creatinine (mg/dL), median±IQR	1±0.3	1.3 ±0.7	p<0.001
Nadir Hemoglobin (g/dL), mean±SD	13 ±1.8	11.7 ±2	P<0.001
ECHOCARDIOGRAPHY			
LVEF ≤40%,n(%)	771(30.6)	109(52.9)	p<0.001
CORONARY ANGIOGRAPHY			
Absence significant CAD, n(%)	96(3.3)	7(3)	p=0.811
Multivessel disease, n(%)	1668(58)	138(60)	p=0.579
Revascularization, n(%)	2426(84.5)	192(83.5)	P=0.681

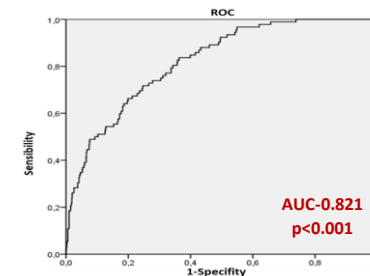
Table 2. In-hospital complications according to the presence of new-onset AF.

IN-HOSPITAL COMPLICATIONS	Without AF (n=2877)	New-onset AF (n=230)	p-value
Death, n(%)	49(1.7)	21(9.1)	p<0.001
Re-infarction, n(%)	42(1.5)	8(3.5)	p=0.028
Stroke, n(%)	17(0.6)	6(2.6)	p=0.005
Cardiogenic shock, n(%)	131(4.6)	34(14.8)	P=0.002
Cardiac arrest, n(%)	67(2.3)	17(7.4)	p<0.001

INDEPENDENT PREDICTORS OF NEW-ONSET AF IN ACS

Age (OR 1.1, p<=0.001), LVEF≤40% (OR 2.2, p=0.001), STElevation ACS (OR 2.6, p<=0.001) and previous valvular heart disease (OR 3.5, p<=0.01).

Figure 1. ROC curve: model performance of predictors of new-onset AF in ACS.



Together with age, Creatinine peak, LVEF≤40%, admission Killip class≥3 and in-hospital B-blocker use (protector effect) this arrhythmia was an independent predictor of overall in-hospital mortality (OR 2.9, p=0.027).

CONCLUSION:

Age, LVEF≤40%, STElevation ACS and previous valvular heart disease are independent predictors of new-onset AF in ACS.

This arrhythmia is associated with higher overall in-hospital mortality.