Research Article   **Open Access**

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Predictions and outcomes of atrial fibrillation in the patients with acute myocardial infarction

Abstract: The large epidemiological studies demonstrated that atrial fibrillation is correlated with high mortality and adverse events in patients with acute myocardial infarction. The aim of this study was to determinate predictors of atrial fibrillation develop during the hospital period in patients with acute myocardial infarction as well as short- and long-term mortality depending on the atrial fibrillation presentation. The 600 patients with an acute myocardial infarction were included in the study and follow-up 84 months. Atrial fibrillation develops during the hospital period was registered in 48 patients (8%). After adjustment by logistic regression model the strongest predictor of atrial fibrillation develop during the hospital period was older age, particularly more than 70 years (odds ratio 2.37, CI 1.23-4.58, p=0.010), followed by increased of Body Mass Index (odds ratio 1.17, CI 1.04-1.33, p=0.012), enlarged diameter of left atrium (LA) (odds ratio 1,18, CI 1,03-1,33, p=0,015) presentation of mitral regurgitation (odds ratio 3.56, CI 1.25-10.32, p=0.018) and B-type natriuretic peptide (odds ratio 2.12, CI 1.24-3.33, p=0.048).Patients with atrial fibrillation develop during the hospital period had a higher mortality during the hospital course (10.4% vs. 5.6%) p=0.179. as well as follow-up period of 84 months than patients without it (64.6% vs. 39.1%) p=0.569, than patients without it, but without statistically significance. Patients with AF develop during the hospital period had higher mortality during the hospital course as well as follow up period of 84 months than patients without it, but without statistically significance.

1 Introduction

Atrial fibrillation (AF) develop in the course of acute myocardial infarction (AMI) is usually registered with an incidence of 6-21% [1-6].

The large epidemiological studies demonstrated that AF is correlated with high mortality and adverse events in patients with AMI [7-9]. However, the answer of this association is still unclear. Thromboembolic complications are one of the known mechanisms [10,11]. Patients with AF develop during the hospital period are older as well as with higher rate of hypertension (HTA) and heart failure (HF) which may contribute to the worse outcome [1,2,7-9,12-16] Atrial fibrillation may precipitate the occurrence of severe ventricular arrhythmias which may lead to sudden death in these patients [17]. The large numbers of research has been done in patients with ST-elevation myocardial infarction (STEMI), but some studies have also included patients [18-21] with non-ST-elevation myocardial infarction (NSTEMI) [12,17,22]. However, there are a small number of research that examined the association between AF develops during the hospital period and clinical outcomes among patients with both STEMI and NSTEMI [2].

Furthermore, some studies have not observed increased mortality both during the hospital as well as long-term follow-up period in patients with AMI and AF develop during the hospital period compared to those without this rhythm disorder [23-25]. This was the reason

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why we do this research and check this association in our interviewees.

Namely, the aim of our research was to assess the impact of AF develop during the hospital period on both mortality during the hospital period as well as after follow-up of 84 months in patients with AMI, but after attenuating other important co-morbidities and state that may affect the results. In order to investigate, we try to get an answer whether AF develops during the hospital period was the independent predictor of high mortality and adverse events in patients after AMI. We also analyzed the variable and outcomes in patients with both STEMI and NSTEMI.

2 Methods

This prospective study included 600 patients with both STEMI and NSTEMI admitted in Coronary Care Unit (CCU) Department of Cardiology Clinical Center of Montenegro, after approval by the local Ethics Committee (No 03/01-16144/1).

The patients were divided into two groups: the cases group including the patients with AF develop during the hospital period and control group without it. All patients included in the study written informed consent.

Inclusion criteria implied patients with AMI both STEMI and NSTEMI with sinus rhythm on admission, the age of 18 or older. Permanent AF, less than 18 years, congenital cardiac disease, organic mitral regurgitation (MR) and healed endocarditis were exclusion criteria.

Troponin I concentration more than the normal value in patients with ischemic symptoms and elevation of ST segment in 2 or more consecutive leads > 0.1 mV was defined as STEMI. Troponin I concentration more than the normal value in patients with ischemic symptoms, but without elevation of ST segment or left bundle branch block was defined NSTEMI.

B-type natriuretic peptide (BNP) was obtained after admission to the hospital. In vitro
 quantitative determination of BNP levels was performed using an electrochemiluminescence
immunoassay pro-BNP (Roche GmBH, Mannheim, Germany) method on an Elecsys 2010
analyzer (Roche). C reactive peptide (CRP) was measured with a nephelometric assay (Dade Behring Diagnostics, Marburg, Germany).

The irregular rhythm on Electrocardiography (ECG) with QRS duration <120 msec with the lack of discernible P waves and duration more than 30 seconds not presented

at hospital admission was defined AF. All patients were continuously monitored by ECG during the whole period in Coronary Care Unit (CCU).

Left ventricular ejection fraction (LV-EF) and left atrial diameter (LA) dimensions were assessed by ECG on admission. Simpson's method was used to assess LV-EF. Mitral regurgitation was estimated as mild when the jet area was under than 20%, moderate in patients in whom the jet area was between 20-40% and severe with the jet area more than 40% of the left atrial area. [26] Left atrial diameter was determined by parasternal long axis view to use a systolic frame in M-mode imaging.

Body mass index, Killip class as well as anemia were determined during the hospital period.

Brain natriuretic peptide (BNP) was determined by electrochemiluminescence immunoassay method in 48 hours after admission.

C-reactive protein (CRP) was determined by immuno-turbidimetric methods in 48 hours after admission.

Thrombolytic therapy is applied or primary percutaneous coronary intervention (PCI) is performed within 24 hours of onset of symptoms in patients with STEMI as well as other therapy regimen which is also performed in NSTEMI such as aspirin, heparin, angiotensin converting enzyme (ACE) inhibitors, ß-blockers, and statins.

The patients were followed up to 84 months after being discharged from the hospital. Assessments were made 1 month after discharge and thereafter every 6 months until the study was completed.

3 Statistical analysis

Continuous variables are presented as either mean +/- standard deviation (SD) or median values and categorical variables as numbers or percentages. Unpaired t-test was used for comparing continuous variables of the groups as well as χ2 and Fisher and Mann-Whitney test for categorical variables of baseline characteristics.

The relationship between patient variables and AF developed during the hospital period was determined by invariable and multivariable logistic analysis. The crude cumulative incidence of mortality according to AF status was illustrated by Kaplan-Meier plot and functions of survival was assessed by Log Rank test. Results were expressed as odds ratio (OR) with 95% confidence intervals (CI). P value < 0.05 was considered as significant. Statistical analyzes were performed using SPSS statistical software version 17.0 (SPSS Inc., Chicago, Illinois, USA).

4 Results

The study population consisted of 600 consecutive AMI patients. During the hospital period 48 patients (8%) developed AF. The baseline characteristics of patients in regards to the presence or absence of AF during the hospital period are listed in Table 1.

Most patients were prescribed ß blockers (75.8%), ACE angiotensin II receptor blockers (86%) and statins (96.8%), Table 2.

Atrial fibrillation status substantially affected the choice of antithrombotic strategy at discharge, Table 3.

4.1 Predictors of AF develop during the hospital period

The strongest predictor of AF develop during the hospital period was older age, particularly more than 70 years, followed by the enlarged diameter of LA, presentation of moderate to severe MR and increased BMI as well as BNP. The other parameters such as heart rate above more than 80 bpm on admission, Killip class and LV-EF, and hsCRP after adjustment by logistic regression model were not independent predictors of this rhythm disorder. Nevertheless, the other parameters such as gender, STEMI, localization of AMI, thrombolytic therapy, PCI as well as coronary artery bypass graft (CABG) during hospital course, previous AMI, heart failure (HF) and cerebrovascular insult (CVI), Diabetes Mellitus, Diabetic neuropathy, chronic obstructive pulmonary disease (COBP), chronic kidney disease (CKD), smoking and arterial hypertension (HTA) are not included in the multivariable logistic regression analyses because unvariable logistic regression analyses not shown statistical significance. The predictors of AF develop during the hospital period are listed in Table 4.

4.2 Correlation between AF between mortality during the hospital course

A total of 36 (6.0%) patients died during the hospital course. A total of 5 patients (10.4%) with AF died during the hospital course as well as 31 patients (5.6%) without AF, but this difference was not statistically significant (p=0.179). A total of 3 (11.5%) patients with STEMI and AF died during the hospital course as well as 2 (9.1%) patients with NSTEMI, but without statistically significance (p>0.05).

4.3 Correlation between AF and mortality during the follow-up period of 84 month

A total of 353 (58.8%) survived during the follow-up period of 84 months. A total of 31 (64.6%) patients with AF developed during the hospital period as well as 216 (39.1%) without AF died during the follow-up period, Figure 1 (p<0.001). A total of 107 (36,9%) patients with STEMI died during the follow-up period of 84 months as well as 140 (45,2%) patients with NSTEMI, but without statistically significance (p>0,05). Patients with AF developed during the hospital period had the higher mortality during the follow-up period. However, but after adjustment for clinical and echo variables, presented in Table 1, only Killip class, LV-EF, BMI as well as ventricular tachycardia (VT) during the hospital course remain independent predictors of mortality during the follow-up period. Clinical parameters such as AF, age, BMI, LA diameter as well as presence of MR after adjustment by logistic regression model were not independent predictors of mortality during the follow-up period, Table 5 and Figure 1.

During the follow u period of 84 months patients with AF develop during the hospital period had high recurrent cardiovascular events such as AMI, hospitalization due to HF, CABG, PCI as well as CVI, but without statistically significance, Table 6.

A total of 5 patients with AF developed during the hospital period and CVI during the follow-up of 84 months were prescribes Aspirin alone, one patient was prescribed both Aspirin and Clopidogrel and one patient was pre-
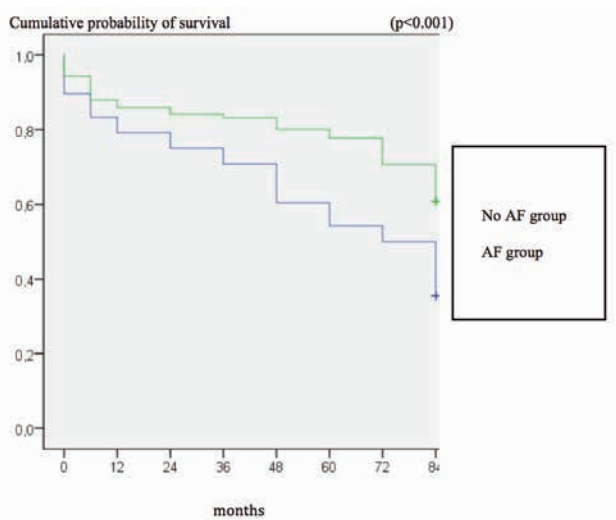

Figure 1: Crude cumulative incidence of mortality during the follows up period of 48 months presented by Kaplan-Meier plots. Green line −No AF group. Blue line − AF group

Table 1: Baseline characteristics in regards to the presence or absence of AF during the hospital period

Characteristics	AF group n= 48	No AF group n=552	p-value
Age (years); mean ± SD	69.9±9.4	63.1±11.4	<0.001*
Gender, n (%)			
male	32 (66.7%)	393 (71.2%)	0.508**
female	16 (33.3%)	159 (28.8%)	
AMI, n (%)			
STEMI	26 (54.2%)	264 (47.8%)	0.399**
Non-STEMI	22 (45.8%)	288 (52.2%)	
Previous AMI, n (%)	14 (29.2%)	120 (21.7%)	0.236**
Previous CABG, n (%)	4 (8.3%)	48 (8.7%)	1.000**
Killip, n (%)			
I	35 (729%)	486 (88.0%)	
II	9 (18.8%)	55 (10.0%)	0.002**
III	3 (6.3%)	7 (1.3%)	
IV	1 (2.1%)	4 (0.7%)	
Previous HF	6 (12.5%)	33 (6.0%)	0.116**
Diabetes mellitus	15 (31.3%)	152 (27.5%)	0.582**
Diabetic neuropathy	15 (31.3%)	119 (21.6%)	0.122**
COPD	14 (29.2%)	166 (30.1%)	0.889**
CKD	17 (35.4%)	170 (30.8%)	0.507**
BMI	28.0±2.6	26.7±2.6	0.001*
Dyslipidemia	17 (35.4%)	180 (32.6%)	0.691**
Smoking	23 (47.9%)	273 (49.5%)	0.838**
Previous CVI	3 (6.3%)	24 (4.3%)	0.469**
HTA	26 (54.2%)	268 (48.6%)	0.455**
LV-EF (%) ±sd	41.7±4.6	43.9±4.9	0.003*
LA diameter (mm)	43.6±3.9	40.4±3.6	<0.001*
MR, n (%)			
None	8 (16.7%)	303 (55.0%)	
Mild	28 (58.3%)	208 (37.7%)	<0.001**
Moderate-severe	12 (25.0%)	40 (7.3%)	
Heart rate on admission (bpm), median (range)	85.5 (55.0-122.0)	77.0 (43.0-125.0)	<0.001***
Thrombolytic therapy	17 (35.4%)	192 (34.8%)	0.930**
Localization of AMI			
anterior	14 (53.8%)	113 (42.8%)	0.279**
inferior	12 (46.2%)	151 (57.2%)	
Stenosis			
0	2 (9.1%)	44 (15.3%)	
1	8 (36.4%)	97 (33.7%)	0.734**
2	12 (54.5%)	147 (51.0%)	
PCI during the hospital course	30 (62.5%)	322 (58.3%)	0.574**
VT during the hospital course	9 (18.8%)	42 (7.6%)	0.014**

Table 1 continued: Baseline characteristics in regards to the presence or absence of AF during the hospital period

Characteristics	AF group n= 48	No AF group n=552	p-value
CIN	18 (37.5%)	83 (15.0%)	<0.001***
Anemia	19 (39.6%)	215 (38.9%)	0.931**
BNP, median (range)	272 (59-371)	64.5(10-140)	<0.001***
hsCRP, median (range)	83.5 (7-291)	24.5 (1-118)	<0.001***
Duration of hospital course, median (range)	14 (10-17)	8 (7-15)	<0.001***

AMI- acute myocardial infarction, STEMI- ST elevation myocardial infarction, NSTEMI- non-ST elevation myocardial infarction, CABG-coronary artery bypass graft, COPD-chronic obstructive pulmonary disease,CKD- chronic kidney disease, BMI-body mass index, CVI- cerebrovascular insult, HTA- hypertensio arterialis, LV-EF – left ventricle ejection fraction, LA- left atrium, MR- mitral regurgitation, VT-ventricular tachycardia, CIN-Contrast Induces Nephropathy, BNP-brain natriuretic peptide, high sensitive C-reactive protein
T test *(age, BMI, EF-LK, LA diameter), χ2 test **(gender, type of AMI, previous AMI, previous ACBG, Killip class, previous heart failure, Diabetes mellitus, Diabetes neuropathy, COBP, CKD, dyslipidemia, smoking, previous CVI, HTA, MR, thrombolytic therapy, localization of AMI, stenosis, PCI during the hospital course, VT during the hospital course, anaemia), Mann-Whitney test ***(Heart rate on admission, BNP hsCRP, duration of hospital course)

Table 2: In-hospital prescription of drugs

Variable	Overall N=600	Atrial fibrillation group N= 48	No Atrial fibrillation group N=552	p-value, χ^2 test
ACE/ARB	516 (86%)	36 (75%)	480 (86.9%)	0.001*
Beta-blockers	455 (75.8%)	34 (70.8%)	421 (76.2%)	0.001*
Calcium antagonist	19 (3.2%)	1 (2.1%)	18 (3.2%)	0.812*
Statins	581 (96.8%)	46 (95.8%)	535 (96.9%)	0.924*
Amiodarone	51 (8.5%)	22 (45.8%)	29 (5.2%)	0.001*
Digoxin	41 (6.8%)	19 (39.6%)	22 (3.9%)	0.001*
Inotropes intravenous	62 (10.3%)	8 (16.7%)	54 (9.8%)	0.001*

ACE-angiotensin converting enzyme ; ARB- Angiotensin II Receptor Blockers; χ^2 test *

scribed Warfarin only, but INR was below the therapeutic level of two at the moment of CVI diagnosis.

5 Discussion

In our study, we presented the incidence of AF develops during the hospital period in STEMI as well as NSTEMI.

5.1 Incidence of atrial fibrillation during the hospital period

In accordance with other previous studies, the AF developed during the hospital period was frequent in STEMI group, but this finding was not statistically significant from NSTEMI [1,2]. The reason of higher incidence of AF in the STEMI population is still undetermined. The incidence of AF in AMI with and without ST-segment elevation was also compared and published at RICO study, but

Table 3: Antithrombotic treatment strategy after hospital discharge in patients with acute myocardial infarction in regards to presence or absence of atrial fibrillation.

Variable	Overall N=600	AF group N= 48	No AF group N=552	*p*-value χ² test
Individual Therapy combinations				
Aspirin alone	142 (23.7%)	15 (31.2%)	127 (23%)	0.099*
Clopidogrel alone	9 (1.5%)	1 (2.1%)	8 (1.4%)	0.341*
Warfarin alone	1 (0.2%)	1 (2.1%)	0 (0.0%)	0.080*
Aspirin + Clopidogrel	409 (68.2%)	11 (22.9%)	398 (72.1%)	0.001*
Aspirin + Warfarin	25 (4.2%)	13 (27.1%)	12 (2.2%)	0.001*
Clopidogrel + Warfarin	5 (0.8%)	2 (4.2%)	3 (0.5%)	0.006*
Number of Treatments				
Single	152 (25.3%)	17 (35.4%)	135 (24.5%)	0.094*
Double	439 (73.2%)	26 (54.2%)	413 (74.8%)	0.002*
Triple	9 (1.5%)	5 (10.4%)	4 (0.7%)	0.001*

* χ2 test

Table 4: The predictors of AF develop during the hospital period in patients with AMI

Independent variable	Unadjusted logistic regression model OR (95% CI)	p	Adjusted logistic regression model OR (95% CI)	P
Age (more than 70 years)	3.32 (1.82-6.04)	<0.001*	2.37 (1.23-4.58)	0.010*
Heart rate on admission(bpm)				
To 80	Reference category		Reference category	
81-100	2.33 (1.21-4.50)	0.012*	0.70 (0.28—1.72)	0.438
More than 100	6.37 (2.60-15.60)	<0.001*	1.71 (0.40-7.29)	0.469
Kilip	1.97 (1.27-3.06)	0.003*	0.72 (0.34-1.51)	0.386
LV-EF	0.92 (0.87-0.97)	0.003*	1.06 (0.97-1.17)	0.205
LA diameter	1.26 (1.16-1.37)	<0.001*	1.18 (1.03-1.33)	0.015*
MR				
None	Reference category		Reference category	
Mild	5.10 (2.28-11.41)	<0.001*	3.32 (0.72-15.365)	0.124
Moderate to severe	11.36 (4.38-29.48)	<0.001*	3.56 (1.25-10.32)	0.018*
BMI	1.22 (1.09-1.37)	<0.001*	1.17 (1.04-1.33)	0.012*
BNP	6.17 (2.65-13.60)	<0.001*	2.12 (1.24-3.33) 1.91(1.22-3.01)	0.048*
hsCRP	5.11 (2.60-13.18)	<0.001*		0.055
CIN	3.39 (1.81-6.36)	<0.001*	1.74 (0.81-3.74)	0.159

*statistically significant predictors

the result was without statistically significance (7.6 vs. 7.7%, p=0.334) [27].

5.2 Predictors of atrial fibrillation develop during the hospital period

We identified the several important baseline predictors of AF develop during the hospital period in setting of AMI. Namely, except age, this study emphasized that the obesity is the independent predictor of this arrhythmia in patients with both STEMI and NSTEMI. Several studies have demonstrated a relationship between obesity and AF [28-32]. Data from the Framingham cohort study have demonstrated a significant dose relationship with increased risk of developing AF with increasing severity of obesity [28]. Obese patients with AF had shorter atrial and pulmonary vein effective refractory period compared to those of normal weight as well as autonomic nervous system dysfunction [33]. Obesity is associated with a proinflamma-

Table 5: Cox's proportional hazards model for mortality during the follow-up period of 84 months

Independent variable	Unadjusted Cox's regression model		Adjusted Cox's regression model	
	HR (95% CI)	p	HR (95% CI)	p
Age (more than 70 years)	1.68 (1.29-2.18)	<0.001*	0.97 (0.74-1.27)	0.810
Kilip class	3.43 (2.81-4.19)	<0.001*	1.45 (1.13-1.87)	0.003*
LV-EF	0.80 (0.78-0.82)	<0.001*	0.85 (0.82-0.88)	<0.001*
LA diameter	1.21 (1.17-1.25)	<0.001*	1.04 (0.99-1.06)	0.140
MR				
None	Reference category		Reference category	
Mild	3.21 (2.40-4.29)	<0.001*	1.27 (0.89-1.81)	0.186
Moderate to severe	7.17 (4.87-10.57)	<0.001*	1.21 (0.69-2.13)	0.498
BMI	1.20 (1.14-1.26)	<0.001*	1.13 (1.08-1.19)	<0.001*
VT	8.68 (6.17-12.22)	<0.001*	3.22 (2.24-4.63)	<0.001*
AF	1.99 (1.37-2.90)	<0.001*	0.88 (0.58-1.34)	0.569

*statistically significant predictors
LV-EF - left ventricular ejection fraction; LA – Left atrial diameter; MR - Mitral regurgitation; BMI – Body mass index; VT – ventricular tachycardia; AF – Atrial fibrillation

Table 6: Recurrent cardiovascular events during the follow-up period of 84 month

Recurrent cardiovascular events during the follow up of 84 month	AF group	No AF group	p-value, χ² test
Mortality	31 (64.6%)	216 (39.1%)	0.569*
AMI	8 (16.7%)	67 (12.1%)	0.363*
Hospitalisation due to HF	22 (45.8%)	230 (41.7%)	0.575 *
CABG	5 (10.4%)	39 (7.1%)	0.384*
PCI	7 (14.6%)	70 (12.7%)	0.705*
CVI	7 (14.6%)	41 (7.4%)	0.093*

* χ2 test
AF – atrial fibrillation; AMI – acute myocardial infarction; HF - heart failure; ACBG- coronary artery bypass graft; PCI - percutaneous coronary intervention; CVI- cerebrovascular insult

tory state and increased oxidative stress which are known to promote both AF onset and persistence [34]. Namely, increased count of various proinflammatory cytokines such as CRP, interleukin 6, and tumor necrosis factor-a have been shown in obese subjects [35,36]. Level of these inflammatory markers are higher in AF patients compared to controls with no history of AF and higher in persistent AF patients compared to paroxysmal AF patients [37]. Data from a Danish cohort indicates that BMI is incrementally associated with the volume of LA which leads to more pronounced trigger activity provoked by a more profound stretching of the pulmonary veins [38]. Enlarged volume of LA also may lead to prolongation of ectopic signals with the easier perpetuation of AF [38,39]. Obesity is a major risk factor for obstructive sleep apnea which also may predispose to AF [40]. MR in AMI may also lead to the acute overload of LA volume as well as enlargement of LA which through the described mechanisms may initiate and perpetuate AF [40-43]. In addition, in accordance with the previous study we also observed a positively graded association between MR severity and AF developed during the hospital period [44].

The predictive value of BNP with respect to the occurrence of AF during the hospital course is unknown.

Asanin et al [45] reported that BNP independentlypredicts the occurrence of AF in STEMI patients treated by primary PCI. Namely, increased levels of BNP are associated with a larger infarct size, progressive ventricular remodeling as well as poor prognosis [46-48]. However, association between BNP and outcome can not be explained simply by heart failure or a reduced left ventricular ejection fraction (LF-EF) [49,50]. Sadanandan et al. [51] reported that elevated BNP levels were associated with more severe stenosis of the infarct-related artery and culprit lesion of the left anterior descending artery.

5.3 Association between atrial fibrillation in patients with AMI and complications developed during the hospital course

In the present study we demonstrated a positive association between AF in patients with AMI and complications developed during the hospital course such as HF and cardiogenic shock, but after adjustment for clinical and echo variables, presented in Table 1, the risk associated with AF was attenuated and not statistically significant.

5.4 Atrial fibrillation as independent predictor of mortality during the hospital course as well as follow up period of 84 months

AF also was not the independent predictor of mortality during the hospital course as well as follow-up period of 84 months. Namely, after controlling the clinical parameter such as Killip class, LV-EF, VT developed during the hospital course as well as BMI the risk associated with AF was attenuated and not statistically significant. This finding was observed in both STEMI and NSTEMI groups for all of the studied outcomes. In spite of previous studies, there were no significant differences in mortality during the hospital period according to the treatment modalities as well as the application of reperfusion therapy with fibrinolytic agents or primary coronary intervention [1,2,12-16]. AF status substantially affected the choice of antithrombotic strategy after discharge, but due to the small number of patients with new-onset AF and CVI, it is difficult to conclude about its relationship. Patients with AMI and AF develop during the hospital period had prolonged hospital stay which raised the costs of their treatment as compared to those without this rhythm disorder [17].

5.5 Atrial fibrillation and recurrent cardio-vascular events during the follow up of 84 month

Atrial fibrillation developed during the hospital course were associated with more recurrent AMI. Hospitalization due to HF, PCI, CABG as well as CVI after adjustment for clinical and echo variables the risk associated with AF was attenuated and not statistically significant. This finding was observed in both STEMI and NSTEMI groups for all of the studied outcomes. This data is in accordance with data in the community-wide study which included 4108 patients hospitalized due to AMI in 16 hospitals. Namely, patients with AF had poorer long-term survival rate than patients without AF, similar to the in-hospital findings the independent effect of AF on long-term prognosis was not upheld after use of a multivariate analysis [23].

6 Conclusion

In our study, we presented that AF is common in both patients with STEMI and those with NSTEMI and difference in the incidence of AF develop during the hospital period was not statistically significant. The strongest predictor of AF develop during the hospital period was older age, enlarged diameter of LA as well as the presentation of moderate to severe MR and increased of BMI. This study also demonstrated the impact of obesity on the incidence AF during the hospital period in patients with AMI which has poor data in published literature. There were no significant differences of in-hospital mortality in the patient after AMI with and without AF according to the treatment modalities as well as the application of reperfusion therapy with fibrinolytic agents or primary coronary intervention. However, AF during the hospital period in patients with AMI is not the independent predictor of mortality both during the hospital course as well as the follow-up period of 84 months.

Conflict of interests: No authors report any conflict of interest.

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