

Impact of Atrial Fibrillation on Outcomes in Patients Hospitalized with ST-Segment Elevation Myocardial Infarction (Poster).

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Impact of Atrial Fibrillation on Outcomes in Patients Hospitalized with ST-Segment Elevation Myocardial Infarction

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BACKGROUND

- Atrial fibrillation (AF) is the most common persistent cardiac arrhythmia with an increasing incidence in the United States (US)
- AF is present in 12-15% patients presenting with STEMI
- Previous reports have suggested that STEMI patients who have AF have worse outcomes.

OBJECTIVE

- We sought to determine the impact of AF on in-hospital outcomes of patients admitted with STEMI in the United States

METHODS

- Data were obtained from the Nationwide Inpatient Sample database for years 2003- 2013
- ICD 9 codes were used to identify patients with STEMI and AF
- Baseline demographic and clinical features were studied and compared between groups of patients with and without AF.
- The primary outcome of interest was all-cause in-hospital mortality.
- Utilization of percutaneous coronary intervention (PCI) and coronary artery surgery (CABG), and the incidences of complications (periprocedural hemorrhage, gastrointestinal bleeding, blood transfusion, and acute ischemic stroke) were also compared in the 2 groups.
- Results are expressed as frequencies (%) for categorical variables and mean \pm SD for continuous variables.
- Differences between groups were analyzed using the Student's t test for continuous variables and the chi-square test for categorical variables.
- Statistical analyses were performed using IBM SPSS, Statistics, version 20.0 (IBM Corp., Armonk, New York).

RESULTS

- Of the total 2,632,447 STEMI hospitalizations, AF was documented in 339,987 (12.9%) patients
- At baseline, patients with AF were older (mean 74 vs 63 years, $p<0.001$) and more likely to be female (42% vs 34%, $p<0.001$) or white (85% vs78%; $p<0.001$). (Table 1)
- Hypertension, chronic renal failure, diabetes mellitus and congestive heart failure were all more prevalent among those with AF ($p<0.001$ for all). (Table 1)
- AF patients were less likely to undergo coronary angiography or any coronary revascularization than non-AF patients. They were more likely to undergo CABG but less likely to undergo PCI.
- Patients with AF had higher risk adjusted in- hospital mortality (16.3% vs 7.9%; OR: 1.16; CI: 1.15-1.18; $p<0.001$). and an increased risk of bleeding complications after both PCI (12.2% vs 5.3%; OR: 1.18; CI: 1.16-1.21; $p<0.001$) and CABG (40.0% VS 33.5%; OR: 1.11; CI: 1.08-1.13; $p<0.001$). (Table 2)
- Average length of stay was also longer among those with AF (mean of 7 days vs 4 days; $p<0.001$).

Table 1. Baseline Characteristics

Characteristics	AF (339,988)	Non-AF (2,292,259)
Age	74.4 +/- 12.5 years	63.6 +/- 14.3 years
Male	196,455 (57.8%)	1,506,360 (65.7%)
White	228,017 (85.3%)	1,391,804 (77.9%)
African American	12,680 (4.7%)	146,865 (8.2%)
Insurance - Medicare	247,890 (73%)	102,4303 (44.8%)
Insurance - Medicaid	10,715 (3.2%)	143,467 (6.3%)
Private	63,246 (18.6%)	837,280 (36.6%)
Obesity	25,089 (7.4%)	222,451 (9.8%)
Hypertension	199,029 (59.1%)	1,312,941 (57.7%)
Diabetes Mellitus	93,338 (27.7%)	613,886 (27%)
Dyslipidemia	131,068 (38.6%)	1,162,491 (50.7%)
Current or Former Smoker	71,638 (21.1%)	874,986 (38.2%)
Prior Myocardial Infarction	25,685 (7.6%)	167,260 (7.3%)
Prior PCI	25,216 (7.4%)	206,090 (9%)
Prior CABG	17,697 (5.2%)	91,920 (4%)
Chronic Kidney Disease	51,047 (15.2%)	177,995 (7.8%)
Chronic Lung Disease	73,306 (21.8%)	355,026 (15.6%)
History of Cerebrovascular Accident	10,529 (3.1%)	39,254 (1.7%)
Peripheral Vascular Disease	32,878 (9.8%)	160,974 (7.1%)

Table 2. Outcomes

Treatment and Outcomes	AF	Non-AF	Adjusted Odds Ratio	P-value
Coronary Angiography	58.2 %	72.7 %	1.00 (0.98-1.01)	.50
Percutaneous Coronary Intervention	41 %	61 %	0.92 (0.91-0.93)	<0.001
Coronary Artery Bypass Grafting	15%	7%	2.37 (2.34-2.40)	<0.001
All-cause In-hospital Mortality	16.3%	7.9 %	1.16 (1.15-1.18)	<0.001
Cardiogenic Shock	14.2%	7.6%	1.27 (1.25-1.28)	<0.001
Bleeding Complications (PCI)*	12.2%	5.3%	1.18 (1.16-1.21)	<0.001
Bleeding Complications (CABG)	40.0%	33.5%	1.11 (1.08-1.13)	<0.001
Acute Ischemic Stroke	1.7%	0.8%	1.4 (1.35-1.44)	<0.001

* GI bleed, retroperitoneal hematoma, transfusion or acute anemia.

LIMITATIONS

- Retrospective design of the study and possibility of varying coding practices among hospitals.
- Inability to differentiate paroxysmal from persistent or permanent AF.
- Medication related data are unavailable due to administrative nature of the database

CONCLUSIONS

- AF is common among patients presenting with STEMI.
- AF is associated with older age, and higher prevalence of comorbidities at admission in STEMI patients.
- AF is independently associated with higher in-hospital mortality, and periprocedural complications in STEMI patients.

Disclosures: Authors have no conflict of interest.

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