

ACUTE MYOCARDIAL INFARCTION

CRT-100.14

Primary Percutaneous Coronary Intervention and biological sex Influence. Independent Risk Factors For Death And Major Events After Immediate- And Medium-term Follow-up



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BACKGROUND Coronary heart disease is the leading cause of mortality and morbidity. A higher mortality risk for women with acute ST-elevation myocardial infarction has been a common finding in the past, even after acute percutaneous transluminal coronary angioplasty (PTCA). Prior studies have reported worse results after PTCA in women than in men. However, recent data suggest that this difference is less marked.

OBJECTIVE To determine gender-related differences and risk factors for death and major events, both in-hospital and at six-month follow-up, of patients who have been admitted within the first 12 hours of ST-segment elevation acute myocardial infarction (AMI) and primary PTCA in order to set out whether there are gender differences in real-world contemporary treatment and outcome.

METHODS For two consecutive years, 199 consecutive patients were enrolled in the study, with ST-segment elevation AMI and primary PTCA without cardiogenic shock. The immediate outcome, in-hospital and six-month follow-up were studied. Multivariate Cox analysis was performed to identify independent predictors of death and major events.

RESULTS Clinical characteristics were similar in both groups, except that women were older than men (67.04 +/- 11.53 x 59.70 +/- 10.88, p<0.0001). In-hospital mortality was higher among women (9.1% x 1.5%, p=0.0171), as was the incidence of major events (12.1% x 3.0%, p=0.0026). The difference in mortality rates remained the same at six months (12.1% x 1.5%, p=0.0026). The independent predictors of death in multivariate analysis: were: female gender and age >80 years old. Independent predictors of major events and/or angina were: multivessel disease and severe ventricular dysfunction.

CONCLUSION After ST-segment elevation AMI and primary PTCA, the independent predictors of mortality throughout the follow-up were female gender and age >80 years, in both in-hospital and six-month follow-up.

CRT-100.15

Ambulatory Holter Monitoring-Based Early Discharge Strategy (within 48 Hours) of Primary PCI Patients - An Observational Study (AESOP Study)



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BACKGROUND Primary PCI is the standard treatment for STEMI and has reduced mortality and hospital stay. We evaluated outcomes and arrhythmia burden of patients discharged very early after their PPCI (within 48 hours).

METHODS We enrolled 71 consecutive patients who underwent successful PPCI in a tertiary center. After excluding those who needed ICU care, staged revascularization, IABP, cardiac arrest, and procedural complications, 44 were included in the study. All underwent ambulatory ECG monitoring prior to discharge for at least 24 hours, and detailed rhythm analysis was done by physiologists blinded to the discharge status. Patients were divided into ED, early discharge group (within 48 hours), and RD, routine

discharge group (after 48 hours), and were followed up for 18 months.

The mean age was 65.7 years (\pm SD12.1) and 55% were men. One-third of the patients were smokers and 17% were diabetics. Inferior MI was diagnosed in half, and all were treated with DES (mean number of stents 1.7 \pm 0.9). Radial access was used in 89% of cases, and 100% had immediate procedure success with restoration of TIMI 3 flow. All were treated with aspirin and prasugrel as per AHA/ACC/ESC guidelines. Median duration of hospital stay was 72 hours and 34.1% (n=15) were discharged within 48 hours (ED group). Higher proportion of patients in the ED group were men (73.3% vs. 48.3%, p=0.112), current smokers (80.0% vs. 29.4%, p=0.001), younger (mean \pm SD, in years, 55.5 \pm 7.5 vs. 70.7 \pm 11.4, p=0.001) and had better renal function (eGFR, mean \pm SD, mmol/l, 85.6 \pm 11.2 vs. 74.2 \pm 11.2, p=0.045). There were no differences in CV risk factors, vitals at admission, door to balloon time, peak troponin levels, left ventricular ejection fraction(53.5 \pm 8.5 vs. 47.3 \pm 9.4, p=0.680), between both groups.

RESULTS Cardiac rhythm analysis showed numerically higher mean heart rates in ED group (mean \pm SD, beats per minute, 66.1 \pm 9.9 vs. 73.1 \pm 11.7, p=0.060). No patient had life-threatening arrhythmia, 5 had transient AF (2 ED), 1 had transient second-degree AV block, 2 had <3 sec asymptomatic pauses (1 ED) and 3 had NSVT (1 ED). There was no difference in overall arrhythmia burden between both the groups. At 18-month follow-up, 2 patients died (overall 4.5%, both in RD group, p=0.541), 1 had TVR (RD group, 3.4%) and 1 had TLR (ED group, 6.7%).

CONCLUSIONS We have shown that significant arrhythmias are rare after PPCI, and discharge within 48 hours is a safe strategy after successful PPCI. If confirmed in large-scale multicentre trials, our findings may have significant implications on health-care resources and costs.

CRT-100.16

Impact of Chronic Kidney Disease on Length of Hospital Stay and Cost Among Patients Admitted with Acute ST-Elevation Myocardial Infarction: A Nationwide Inpatient Sample 2012-2014



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INTRODUCTION Chronic kidney disease (CKD) is a common comorbidity among patients with coronary artery disease. The objective of this study is to assess length of stay and hospitalization cost among patients with CKD admitted for ST-elevation myocardial infarction (STEMI).

METHODS A nationwide inpatient sample database from 2012-2014 was used to identify all patients admitted to hospital with STEMI using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes (n=534,845). Patients with dialysis dependent CKD (n=8,100) and CKD without dialysis (n=51,285) were compared to non-CKD patients (475,460). Outcomes measured were length of hospital stay (LOS) and inflation-adjusted cost of hospitalization. Hierarchical linear regression analysis was performed, and p<0.05 was considered as the level of significance.

RESULTS Patients having CKD without dialysis and with dialysis had higher LOS compared to non-CKD patients (5.86 \pm 13.97, 7.57 \pm 26.06 and 3.99 \pm 11.09 days respectively, p<0.0001). Patients with CKD without dialysis and with dialysis had higher cost of hospitalization compared to non-CKD patients (\$25,696 \pm 63,024, \$35,666 \pm 104,940 and \$23,264 \pm 49,712 respectively, p<0.0001). Other predictors for LOS in days and cost of care in \$ are provided in **Figure 1**.

CONCLUSION Compared to non-CKD patients, CKD patients who present with STEMI increase LOS, cost of hospitalization, and overall health-care burden.

Variables	Cost of Care				P-value	Length of Stay				P-value
	N	Sum of weights	Mean	Std Dev		N	Sum of weights	Mean	Std Dev	
Chronic Kidney Disease					<.0001					<.0001
No CKD	63234	468170.07	23264.47	49712.98		94868	474340.08	3.68	11.08	
CKD with HD	1583	7915.00	32666.53	104940.53		1617	8085.00	7.57	26.06	
CKD without HD	8928	48640.01	25696.78	63024.39		10238	51195.02	5.86	13.97	
Age					<.0001					<.0001
18-34	1255	8275.00	21719.40	59155.54		1271	8355.00	3.48	11.17	
35-49	14536	72680.02	22940.88	48564.39		14789	73945.03	3.54	10.34	
50-64	41628	208140.04	24446.06	52568.18		42370	211850.04	4.04	12.12	
65-79	31313	156505.04	26354.21	56883.79		31949	159745.04	4.64	12.64	
≥80	16013	80064.98	19225.75	43971.02		16345	81724.99	4.58	10.88	
Gender					<.0001					0.0051
Female	33606	168030.01	21877.15	46008.89		34281	171405.01	4.39	10.92	
Male	71139	355695.07	24468.50	55139.47		72443	362215.09	4.15	12.28	
Cardiogenic shock					<.0001					<.0001
No	92682	463410.06	21075.67	37069.27		94451	472255.08	3.74	9.14	
Yes	12063	60315.02	43316.05	105569.97		12273	61365.02	7.99	22.38	
Charlson/Devo comorbidity index					<.0001					<.0001
1	41741	208705.05	20197.42	28678.44		42445	212225.05	2.95	6.11	
2	30281	151405.00	23309.28	48566.84		30789	153945.01	4.00	10.98	
≥2	32723	163615.03	28328.05	72790.91		33490	167450.04	6.05	16.23	
Primary payer					<.0001					<.0001
Medicare/Medicaid	55719	278595.04	20556.01	54776.18		56822	284110.05	4.64	13.20	
Private including/HMO	35084	175420.03	24000.12	50615.16		35858	179280.03	3.74	9.83	
Self pay/other	13942	68710.01	22881.79	47207.35		14044	70220.01	3.81	10.53	
Admission day					0.1984					0.0378
Weekend	29294	146420.01	23456.93	50402.31		29811	149055.02	4.13	11.46	
Weekday	75481	377305.07	23707.02	53227.44		76913	384565.08	4.26	12.02	
Hospital region					<.0001					<.0001
Northeast	18217	91095.00	24545.55	59624.43		18264	91320.00	4.63	12.93	
Midwest	24368	121839.88	23372.79	50405.36		25222	126109.90	3.98	10.79	
South	42560	212800.15	21552.02	44302.06		42579	212895.15	4.31	12.00	
West	19600	98000.05	27648.95	62026.61		20659	103295.05	4.00	11.80	
Hospital teaching status					<.0001					<.0001
Rural	9091	45454.97	18380.84	40707.30		9165	45824.97	3.38	8.32	
Urban non teaching	38047	190235.00	22456.80	41503.15		38629	193145.01	3.92	9.96	
Urban teaching	57607	288035.11	26246.13	58701.47		58930	292497.37	3.38	8.32	
Hospital bedsize					<.0001					<.0001
Small	11844	58220.08	20956.12	38340.55		12172	60860.08	3.61	9.27	
Medium	27312	136559.88	22344.46	46446.27		28153	140765.00	3.95	10.20	
Large	65589	327945.03	24822.02	56640.13		66389	331985.02	4.45	12.87	

CRT-100.17

Prognostic Impact of Ischemic Preconditioning in Patients Presenting for Acute ST-elevation Myocardial Infarction



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BACKGROUND Ischemic preconditioning (IP) is associated with lesser myocardial infarct size in animal studies. In humans, when occurring before ST-elevation myocardial infarction (STEMI), the prognostic significance of IP episodes is still controversial. In this study, we sought to determine prognostic features associated with IP in patients admitted for STEMI.

METHODS The present study was carried out on our single-center retrospective STEMI registry. The registry enrolled 1498 patients presenting with STEMI between January 1998 and September 2014. Exploitable data from only 1404 patients were analyzed. Patients were managed by prehospital thrombolysis, primary percutaneous coronary intervention or conservatively (i.e., with no reperfusion therapy). Patients experiencing recurrent ischemic symptoms before the index STEMI were part of the IP group. Those with no symptoms were part of the Inaugural group. Univariate and multivariate predictors of in-hospital mortality, including IP, were studied.

RESULTS Out of the study population, 442 (31.5%) patients were part of the IP group. Compared with the patients in the Inaugural group, patients in the IP group had more frequent arterial hypertension (36.7% vs. 27%, p<.001), diabetes mellitus (41% vs. 32.7%, p=0.003) and a history of coronary artery disease (21% vs. 6.2%, p<.001). Prevalence of heart failure on presentation was not significantly higher in the IP group. In-hospital mortality rate was significantly lower in the IP group compared to the Inaugural group (5.9% vs. 10.6%, p=0.004). In univariate analysis, the absence of IP, advanced age, female gender, arterial hypertension, diabetes mellitus, heart failure on presentation, and cardiogenic shock were significantly associated with in-hospital death. In multivariate analysis, in addition to other predictors, the absence of IP was independently associated with in-hospital death (HR: 2.38, 95% CI: 1.47-3.84, p<.001).

CONCLUSION According to our study, although associated with cardiovascular risk factors, IP in patients presenting with STEMI is independently associated to better in-hospital outcomes.

CRT-100.18

Impact of Chronic Kidney Disease on Clinical Outcomes Among Patients Admitted With Acute ST-Elevation Myocardial Infarction: A Nationwide Inpatient Sample 2012-2014



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INTRODUCTION Chronic kidney disease (CKD) in patients with ST-elevation myocardial infarction (STEMI) is a poor prognostic factor. The objective of this study is to assess clinical outcomes among patients with CKD admitted for acute STEMI.

METHODS A nationwide inpatient sample database from 2012-2014 was used to identify all patients admitted to hospital with STEMI using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes (n=534,845). Patients with dialysis-dependent CKD (n=8100) and CKD without dialysis (n=51,285) were compared to non-CKD patients (475,460). Clinical outcomes were measured. Hierarchical logistic regression was performed, and p<.05 was considered as the level of significance.

RESULTS The rate of any cardiac complication was 2.45% in non-CKD patients. Compared to non-CKD patients, any cardiac complication was lower in CKD patients without dialysis (1.99%, p<.0001) and similar in dialysis-dependent CKD patients (2.35%, p=0.553). Hemorrhage or hematoma was revealed in 10.66% of non-CKD patients. Compared to non-CKD patients, hemorrhage or hematoma was significantly higher in CKD patients without dialysis (17.84%, p<.0001) and dialysis-dependent CKD (20.37%, p<.0001). Compared to non-CKD patients (7.17%), acute renal failure was higher in CKD patients without dialysis (40.62%, p<.0001). Detailed data on results in form of percentage are highlighted in Figure 1.

CONCLUSION Compared to non-CKD patients, CKD patients who present to hospital with STEMI have higher complications including markedly higher hemorrhage or hematoma and acute renal failure.

Outcomes	CKD without HD	no CKD	Overall	P-value	CKD with HD	no CKD	Overall	P-value
Any cardiac complications				<.0001				0.5539
No	98.01	97.55	97.00		97.65	97.55		
Yes	1.99	2.45	2.99		2.35	2.45		
Cardiogenic shock				<.0001				<.0001
No	82.16	89.34	88.64		79.63	89.34		
Yes	17.84	10.66	11.36		20.37	10.66		
Hemorrhage or Hematoma				<.0001				0.013
No	97.51	97.87	97.84		97.47	97.87		
Yes	2.49	2.13	2.16		2.53	2.13		
Anemia or hemorrhage requiring blood transfusion				<.0001				<.0001
No	89.88	96.61	95.98		82.35	96.61		
Yes	10.12	3.39	4.04		17.65	3.39		
Vascular complications				0.1677				0.1135
No	99.98	99.97	99.97		99.94	99.97		
Yes	0.02	0.03	0.03		0.06	0.03		
Post-op respiratory failure				<.0001				<.0001
No	98.37	98.93	98.88		97.35	98.93		
Yes	1.63	1.07	1.12		2.65	1.07		
Post-op infarct or hemorrhage				<.0001				<.0001
No	99.77	99.85	99.84		99.63	99.85		
Yes	0.23	0.15	0.16		0.37	0.15		
Acute renal failure				<.0001				<.0001
No	59.38	92.83	89.57		85.25	92.83		
Yes	40.62	7.17	10.43		14.75	7.17		
New Temporary Pacemaker				<.0001				<.0001
No	96.65	97.57	97.48		96.11	97.57		
Yes	3.35	2.43	2.52		3.89	2.43		
New Permanent Pacemaker				<.0001				<.0001
No	88.63	99.54	99.45		88.83	99.54		
Yes	1.37	0.46	0.55		1.17	0.46		
Pericardial complications				0.0074				<.0001
No	99.62	99.69	99.68		99.26	99.69		
Yes	0.38	0.31	0.32		0.74	0.31		

CRT-100.19

Utility of Post-Procedural Anticoagulation after Primary PCI for STEMI: Cardiac Magnetic Resonance and 2D-Echocardiographic Findings



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BACKGROUND Controversy exists as to whether and how long anticoagulation is necessary after primary percutaneous coronary