intervention (PCI) in the era of current ST-segment elevation myocardial infarction (STEMI). Our aim was to study the impact of prolonged (>24 hours) or brief (≤24 hours) anticoagulation on infarct size (IS) and microvascular obstruction (MVO) assessed by cardiac magnetic resonance (CMR) at 30 days, and on 2D-echocardiographic findings at 1 year in patients with STEMI who underwent primary PCI in the INNOVATION randomized trial (NCT02324348).

METHODS Among 114 patients enrolled in the trial, 76 (66.7%) received prolonged anticoagulation (median duration 72.6 hours) and 38 (33.3%) received a brief (median duration 5.0 hours). CMR could be evaluated in 105 (92.1%) patients, and evaluable 2D-echocardiography results were present in 89 (78.1%) patients. Left ventricular (LV) remodeling was defined as a ≥20% increase in end-diastolic volume at the 1 year follow-up.

RESULTS Patients with prolonged anticoagulation were significantly younger, had lower level of glucose, and were more likely to have single-vessel coronary disease. However, complete revascularization was less often achieved in patients with prolonged anticoagulation; a prolonged anticoagulation was associated with lower rate of complete ST resolution. After adjusting for differences in baseline variables, prolonged anticoagulation did not reduce larger IS (defined as >75th percentile of IS, 19.7% [prolonged anticoagulation] versus 35.6% [brief], adjusted odds ratio [OR]: 0.589, 95% confidence interval [CI]: 0.215-1.610, p=0.303) nor cut the incidence of MVO (50.7% versus 52.9%, adjusted OR: 0.869, 95% CI: 0.319-2.358, p=0.782). Also, patients who received prolonged or brief anticoagulation after primary PCI experienced similar rate of LV ejection fraction <35% (3.2% versus 7.4%, adjusted OR: 0.347, 95% CI: 0.025-4.712, p=0.426), left atrial volume index >32 mL/m^2 (38.7% versus 29.3%, adjusted OR: 1.484, 95% CI: 0.392-5.618; p=0.674), and LV remodeling (24.2% versus 14.8%, adjusted OR: 1.493, 95% CI: 0.363-6.135, p=0.579) evaluated by 2D-echocardiography at 1 year.

CONCLUSION These data suggest that prolonged anticoagulation for routine prophylaxis may not provide benefit after successful primary PCI in patients with STEMI. Therefore, routine post-procedural anticoagulation after primary PCI should not be recommended unless a well-established indication is present.

CRT-100.20

Longer Duration of Chest Pain Before Hospital Arrival in ST-elevation Myocardial Infarction Patients Is Associated With Adverse Cardiovascular Outcomes

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INTRODUCTION The duration between onset of angina and reperfusion is a critical determinant of infarct size and the likelihood of adverse myocardial remodeling in patients with ST-elevation myocardial infarction (STEMI). There are no definite data examining the prognostic importance of duration of angina before reaching hospital (prehospital delay) on cardiovascular outcomes after percutaneous coronary intervention (PCI).

METHODS We performed a retrospective, multi-center study of patients presenting with STEMI who received PCI within 90 minutes between January 2014 and December 2016 to Buffalo General and South Buffalo Mercy Hospitals. Exclusion criteria were patients with prior history of heart failure, absence of pre-discharge echocardiogram, or unclear report of angina duration. The duration of angina from onset to reaching the hospital (onset-to-door time) was obtained from electronic charts. Patients with onset-to-door time of angina ≤6 hours versus >6 hours were compared. The primary outcome was the development of major adverse cardiovascular events within 1-year, defined as a composite outcome of death, recurrent MI, target vessel revascularization, or stroke. The left ventricular ejection fraction (LVEF) on pre-discharge echo was recorded.

RESULTS A total of 1546 consecutive patients were screened; 262 patients were included in the final analysis. Of those, 176 patients had onset-to-door time of ≤6 hours, and 86 patients with symptoms >6 hours. Patients with symptoms >6 hours had significantly higher MACE compared to patients with symptoms ≤6 hours (64.0% vs. 29.9%, RR 2.2, p= 0.035). No significant difference was found in LVEF after PCI between the two groups. There were no significant differences in age, sex, race, history of hypertension, diabetes, smoking status, prior MI, or statin use between the two groups. Patients with symptoms >6 hours were more likely to be on aspirin (38% vs. 18.5%, p <0.01).

CONCLUSION Our study shows that a longer duration of chest pain before hospital arrival is associated with worse cardiovascular outcomes within 1 year after PCI. Such differences are independent of other cardiovascular comorbidities including left ventricular systolic function.

CRT-100.21

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

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INTRODUCTION Studies have shown that patients with chronic kidney disease (CKD) less frequently receive guideline-directed interventions for acute ST-elevation myocardial infarction (STEMI) as compared to patients without CKD. The objective of this study is to assess utilization of guideline-directed interventions 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). Outcome measured was utilization of interventions. Hierarchical logistic regression was performed, and p<0.05 was considered as the level of significance.

RESULTS Diagnostic coronary angiography was performed in 85.91% patients without CKD. Compared to patients without CKD, only 68.70% of patients with CKD not on dialysis (p<0.0001) and 64.69% of dialysis dependent CKD patients (p<0.0001) underwent diagnostic coronary angiography. Percutaneous coronary intervention (PCI) was performed in 77.38% of patients without CKD. Compared to patients without CKD, only 56.18% of patients with CKD not on dialysis (p<0.0001) and 48.02% of dialysis-dependent CKD patients (p<0.0001) underwent PCI. Detailed data on outcomes are highlighted in form of percentage in Figure 1.

CONCLUSION Compared to non-CKD patients, CKD patients who present to hospital with STEMI receive substantially lower guideline-directed interventions. Health-care policies and quality improvement projects should be implemented to provide better level of care to these patients.

VARIABLES	CKD without HD	No CKD	Overall	P-value	CKD with HD	No CKD	Overall	P-value
CoronaryAngiography				<0.0001				<0.0001
No	31.30	14.09	15.77		35.31	14.09	14.45	
Yes	68.70	85.91	84.23		64.69	85.91	85.55	
Percutaneous Coronary Interventions				<0.0001				<0.0001
No	43.82	22.62	24.69		51.98	22.62	23.11	
Yes	56.18	77.38	75.31		48.02	77.38	76.89	
Drug-Eluting Stents				<0.0001				<0.0001
Other	66.10	47.06	48.91		73.15	47.06	47.50	
Drug-Eluting	33.90	52.94	51.09		26.85	52.94	52.50	
Non Drug-Eluting Stents				<0.0001				<0.0001
Other	83.29	80.26	80.56		86.30	80.26	80.37	
Non Drug-Eluting	16.71	19.74	19.44		13.70	19.74	19.63	
Types of PCIs				<0.0001				<0.0001
Single-vessel PCI	84.82	87.12	86.95		81.29	87.12	87.06	
Multi-vessel PCI	15.18	12.88	13.05		18.71	12.88	12.94	
Thrombolysis				<0.0001				<0.0001
No	99.11	98.85	98.88		99.57	98.85	98.86	
Yes	0.89	1.15	1.12		0.43	1.15	1.14	
CABG				<0.0001				<0.0001
No	92.95	93.97	93.87		92.90	93.97	93.95	
Yes	7.05	6.03	6.13		7.10	6.03	6.05	
Use of Intra-aortic Balloon Pump				<0.0001				<0.0001
No	89.23	91.30	91.10		89.44	91.30	91.27	
Yes	10.77	8.70	8.90		10.56	8.70	8.73	
Use of Percutaneous Ventricular Assist Device				<0.0001				<0.0001
No	99.03	99.38	99.35		98.46	99.38	99.36	
Yes	0.97	0.62	0.65		1.54	0.62	0.64	
Use of Cardiopulmonary Bypass				<0.0001				0.5237
No	94.37	95.28	95.19		95.12	95.28	95.27	
Yes	5.63	4.72	4.81		4.88	4.72	4.73	

CRT-100.22

Outcomes of Percutaneous Coronary Intervention in Patients with Atrial Fibrillation Presenting With Acute Myocardial Infarction

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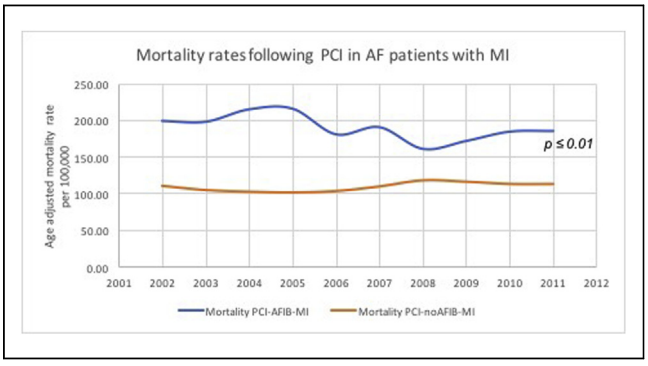
BACKGROUND Atrial fibrillation (AF) is common in patients presenting with myocardial infarction (MI). Percutaneous coronary intervention (PCI) has been shown to improve cardiovascular outcomes in MI. However, outcomes of PCI in AF patients presenting with MI remain largely unknown.

METHODS We analyzed the Nationwide Inpatient Sample (NIS) database to calculate the age-adjusted mortality rate for PCI in AF patients presenting with MI between 2002 and 2011, in adults over 40 years of age. This was then compared to the mortality rate for PCI in non-AF patients with MI. Specific ICD-9-CM codes were used to identify patients and outcomes.

RESULTS Of 3,226,405 PCIs done during the study period, 472,609 (14.6%) PCIs were done on AF patients, of which 137,870 PCIs were for MI. About 60% of these patients were male. Patients with AF were older (71.3±10.6 years). Overall, the number of PCIs showed a declining trend from 2002 to 2011, but for MI patients, the number of PCIs appeared stable over the years. The age-adjusted in-hospital mortality following PCI in MI was significantly higher in AF group compared to the non-AF group (190.24±17.21 vs. 109.08±5.89 per 100,000; p<0.01). These results are summarized in Figure 1. This trend was seen during the entire study period. The age-adjusted in-hospital mortality following PCI for stable coronary artery disease (CAD) was also significantly higher in AF group compared to non-AF group (65.18± 9.82 vs. 29.24±6.67 per 100,000; p<0.01).

CONCLUSIONS AF is prevalent in MI patients undergoing PCI. AF is associated with increased mortality following PCI for acute MI. AF is not a benign arrhythmia in MI patients, and close attention is warranted in these patients to improve mortality.



CRT-100.23

The Effect of Index Admission Revascularization on Readmission Over Time After Myocardial Infarction

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INTRODUCTION Readmission after myocardial infarction (MI) is a publicly reported quality metric. Readmission rates, however, are calculated independent of the treatment received while admitted for MI. We sought to evaluate the effect of revascularization on the risk of readmission after MI over time.

METHODS Patients who were discharged with a principal diagnosis of MI from January 2010 to January 2017 were retrospectively identified using our institutional billing system. Patients were separated by revascularization strategy during the index admission: percutaneous coronary intervention (PCI), coronary artery bypass grafting (CABG) and medical management. Readmission for any cause within 90 days of discharge was the primary endpoint. We calculated the instantaneous risk of readmission by revascularization strategy using a multiphase hazard model.

RESULTS Six thousand three hundred ninety-two patients were admitted 6693 times for a principal diagnosis of MI. One thousand four hundred twenty-nine patients were readmitted within 90 days for a total of 2137 readmissions. Of those readmitted, 224 underwent CABG, 633 received PCI, and 607 were medically managed. Six hundred seventy-seven (32%) of the readmissions occurred within 2 weeks of discharge. The risk of readmission is highest for all groups immediately after discharge, and this risk remained highest for those patients who received medical management throughout the follow-up period (p<0.0001) (Figure 1).

CONCLUSIONS Following an index MI, patients are most vulnerable for readmission immediately after discharge, and patients who are not revascularized represent the highest-risk group. Identifying why patients were not candidates for revascularization during the index admission, such as prohibitive comorbid risk, anatomy not suitable for revascularization or planned staged revascularization, may help explain their increased risk for readmission.

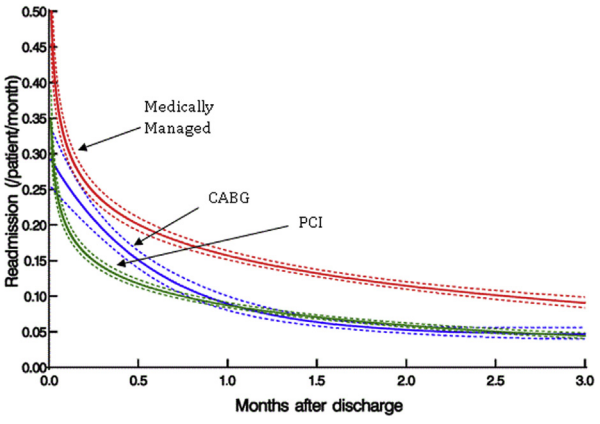

Figure 1. Instantaneous risk of readmissions after admission for myocardial infarction stratified by revascularization strategy: Medical Management (red); Coronary Artery Bypass Grafting (blue); Percutaneous Coronary Intervention (green). Solid line is the parametric estimates of the instantaneous risk of readmission enclosed within a 68% confidence interval.

CRT-100.24

Acute Myocardial Infarction in Patients with Paraplegia: Percutaneous Coronary Intervention or Coronary Artery Bypass Grafting?

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BACKGROUND Cardiovascular disease has become a leading cause of death for individuals with paraplegia. This is the first clinical study in the literature to investigate the clinical outcomes and treatment of AMI patients with paraplegia.

METHODS We identified AMI patients with paraplegia cohort by using principal diagnosis of AMI (ICD-9 codes 401.xx) and a concomitant diagnosis of paraplegia (344.1) and/or quadriplegia/tetraplegia (344.0) in New York State Inpatient Database (NY-SID) from 2007 to 2013.