

# CORONARY

## ACUTE CORONARY SYNDROME

### CRT-100.03

#### Cardiogenic Shock and ST-elevation Myocardial Infarction: Do Patients With Prior CABG Or Prior PCI Do Better?



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**BACKGROUND** Patients with ST-elevation myocardial infarction (STEMI) and cardiogenic shock (CS) have extremely high mortality rates. We sought to assess the effect of previous surgical revascularization by coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI) on in-hospital outcomes of STEMI patients with CS undergoing primary PCI.

**METHODS** Between January 2010 and May 2017, a total of 241 patients were admitted to our institution with STEMI and CS, defined by New York State Percutaneous Coronary Interventions Reporting System (PCIRS) as acute and persistent systolic blood pressure <80 mmHg on mechanical or pharmacological support. Baseline clinical, angiographic and procedural characteristics, as well as in-hospital outcomes, were prospectively collected among all patients undergoing primary PCI as part of the New York State PCIRS data collection.

**RESULTS** Patients with a prior CABG were older and had a history of congestive heart failure, hypertension, dyslipidemia, and diabetes (Table). The left anterior descending (LAD) artery was usually the culprit vessel in post-PCI and revascularization naïve patients, and a vein graft in post-CABG patients. Short- and long-term outcomes are shown in the table.

	Prior CABG (n=12)	Prior PCI (n=53)	No Prior Revascularization (n=176)	p value
Age	73.5±7.5	64.1±12.1	64.9±13.2	0.003
Male (%)	10 (83.3)	32 (60.4)	117 (66.5)	0.31
Hypertension (%)	11 (91.7)	38 (73.1)	88 (52.1)	0.002
Dyslipidemia (%)	11 (91.7)	35 (67.0)	57 (33.7)	<.0001
Diabetes mellitus (%)	6 (50)	13 (25)	88 (52.1)	0.01
Congestive heart failure (%)	2 (16.7)	8 (15.4)	7 (4.0)	0.01
IABP/Impella (%)	6 (50.0)	37 (69.8)	112 (63.6)	0.41
In-hospital and 30 day mortality (%)	4 (40.0)	15 (30)	59 (33.5)	0.80
12 month mortality (%)	5 (41.7)	18 (34.0)	66 (37.5)	0.03
TIMI Major Bleed (%)	0	2 (3.8)	37 (21.1)	0.006
Stroke (%)	0	0	2 (1.1)	0.93
MACCE (Death/MI/CVA) (%)	5 (41.7)	22 (41.5)	108 (61.3)	0.87

**CONCLUSIONS** The results of this study show that in patients with STEMI and CS undergoing primary PCI: 1) Patients with a prior history of CABG are usually older and have more comorbidities; 2) short-term mortality rates are similar for all three groups; 3) the 12-month mortality rates are higher in post-CABG patients; and 4) major bleeding complications are more frequent in revascularization naïve patients.

### CRT-100.04

#### Radial Access And Early Complete Revascularization as Factors Associated With Lower Mortality In Patients With ACS SST



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**INTRODUCTION** Many changes have occurred throughout the development of primary coronary angioplasty: modalities of door-balloon time reduction, drug-eluting stents, antithrombotic drugs, etc. Transradial access (TRA) nearly eliminates access complications and reduces hospitalization duration, costs, and periprocedural morbidity, even in the emergent setting. Although complete coronary revascularization is associated with improved cardiac function and better long-term prognosis, current guidelines recommend only treating the culprit lesion; however, there is no consensus about the best treatment strategy for this clinical syndrome. Both TRA and complete coronary revascularization have added great clinical impact' although they aren't systematically adopted by all groups.

**OBJECTIVE** To evaluate clinical characteristics and the procedure of primary coronary angioplasty between two periods of time according to the introduction of progressive improvements.

**MATERIAL AND METHODS** Between July 2000 and September 2017, direct or primary coronary angioplasty procedures were analyzed (n=473). The population was divided in two groups: period of time **2000-2009 Group "A"** (n=201) and **2010-2017 Group "B"** (n=272). The baseline characteristics were respectively n(%): age 56,6±11 vs. 59,8±10 years; females 21(10) vs. 38(14); diabetes 40(20) vs. 32(12) p=0.02; smoke 123(61) vs. 96(35) p=0.001; prior infarct 20(10) vs. 40(15); prior PCI 21(10) vs. 48(18) p=0.03; multivessel disease 109(54) vs. 129(47); anterior infarct 86(43) vs. 76(28) p=0.001; Killip Killamb C/D 17(8) vs. 11(4); visible thrombus 127(63) vs. 151(55); TIMI flow pre "0" 106(53) vs. 166(61); thromboaspiration 14(7) vs. 31(11); inhibitor GP IIb/IIIa 45(22) vs. 36(13) p=0.01; index multiple PCI 33(16) vs. 64(23) p=0.05; complete revascularization during hospitalization 7(3) vs. 42(15) p<0.002; radial access 7(3) vs. 165(61) p<0,01; ejection fraction 54,6±14 vs. 54,3±15.

**RESULTS** Clinical success 182(91) vs. 264(97) p=0.002; global mortality 10(5) vs. 5(1,8) p=0.05; cardiovascular mortality 9(4,4) vs. 5(1,8); re-AMI 3(1,4) vs. 5(1,8); acute coronary occlusion 2(0,9) vs. 5(1,8) and stroke 2(0,9) vs. 1(0,4).

**CONCLUSION** In the two periods of analysis, the populations presented differences between risk factors, antecedents and clinical presentation; although the incidence of multiple vessel disease remained constant. The introduction of TRA and early complete revascularization had an impact on the reduction of intrahospital major adverse events in the global population of ACS SST.

### CRT-100.05

#### The Impact of Initial Left Ventricular End Diastolic Pressure on the Incidence of Contrast-Induced Nephropathy in Patients with Acute Coronary Syndrome Undergoing Percutaneous Coronary Intervention



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**BACKGROUND** Left ventricular end-diastolic pressure (LVEDP) is a reflection of diastolic function and hydration status. We analyzed the relationship between LVEDP and the incidence of contrast-induced nephropathy (CIN) in patients with acute coronary syndrome (ACS) undergoing percutaneous coronary intervention (PCI).

**METHODS** Between January 2006 and December 2008, a total of 264 ACS patients had LVEDP assessed at the prior to PCI. CIN was defined as an increase in serum creatinine ≥25% from baseline or an absolute increase of >0.5mg/dL from baseline. Patients were divided into three groups according to baseline LVEDP (<12 mmHg, 12-20 mmHg and >20 mmHg). Baseline clinical, angiographic and procedural characteristics, as well as in-hospital and 12-month outcomes were collected.

**RESULTS** Baseline clinical characteristics were similar in all three groups. A total of 18 patients had an LVEDP<12 mmHg and only 1 (5.6%) developed CIN, 83 patients had and LVEDP=12-20 mmHg and 15 (18.1%) developed CIN, and 97 patients had an LVEDP >20 mmHg and 22 developed CIN (22.7%).

	LVEDP <12 mmHg (n=18)	LVEDP=12-20 mmHg (n=83)	LVEDP >20 mmHg N=97	p
Age	65.3±12	61.1±14	61.3±13	0.92
Male (%)	15 (83.3%)	55 (66.3%)	69 (71.1%)	0.36
Hypertension (%)	11 (61.1%)	47 (56.6%)	47 (48.5%)	0.46
Diabetes mellitus (%)	2 (11.1%)	20 (24.1%)	32 (33.0%)	0.10
Ejection fraction (%)	51.9%±16.9	49.9%±14.9	42.9%±15.4	0.02
Baseline GFR (ml/min/m2)	70.02	78.10	89.59	0.35
GFR at 24 hours (ml/min/m2)	75.21	87.50	87.82	0.70
GFR at 48 hours (ml/min/m2)	70.21	81.66	88.66	0.60
Delta GFR	3.034	13.72	-3.058	0.18
CIN (%)	1 (5.6%)	15 (18.1%)	22 (22.7%)	0.09
In-hospital mortality (%)	0	0	0	NS
12 month mortality (%)	3 (16.7%)	2 (2.4%)	9 (9.3%)	0.02
MACCE (Death/MI/Stroke)	6 (33.3%)	27 (32.5%)	32 (33.0)	0.96

**CONCLUSIONS** In ACS patients undergoing PCI, normal LVEDP values were associated with a better outcome, with lower 12-month mortality rates. There seems to be a strong trend (p=0.09) toward a higher rate of CIN in patients with elevated LVEDP on presentation.

**CRT-100.06**

**Retroviral-positive Patients (HIV) Presenting With Acute Coronary Syndrome — Dilemma For Coronary Interventions: To Do or Not to Do**



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**INTRODUCTION** The current spectrum of human immunodeficiency virus (HIV) infections dramatically shifted after the advent of effective antiretroviral therapy. Cardiovascular disease, including atherosclerosis and atherosclerosis-associated complications, is an increasing cause of morbidity and mortality in HIV patients in the post-antiretroviral therapy era. The aim of our study was to study the clinical and angiographic profile of HIV-infected patients presenting with acute coronary syndrome (ACS), their in-hospital outcomes, and therapeutic challenges with respect to coronary revascularization.

**MATERIALS AND METHODS** A prospective observational study conducted from January 2013 to September 2017. We studied 109 consecutive patients infected with HIV and presenting with ACS to our acute coronary care unit. The baseline clinical characteristics, response to fibrinolytic therapy, angiographic findings, and results of percutaneous coronary intervention and in-hospital outcomes were studied.

**RESULTS** The mean age of patients was 46 years, which is lower than HIV-uninfected patients. Most patients presented with Acute Anterior Wall ST-Elevation Myocardial Infarction (n=98, 89%). Thrombolysis was successful in 96 (78.33%) and failed in 13 (21.67%) patients. Four patients underwent rescue angioplasty, and primary PCI was done in 3 patients. Coronary angiography was done in all the patients, revealing significant residual stenosis in 51 patients. Three-vessel coronary artery disease (CAD) were seen in only 4 patients (3.7%); two-vessel CAD was seen in 16 patients (14.7%). Sixty-nine patients (81.6%) had significant single-vessel lesions. All patients with significant residual lesions (n=51) underwent PCI with drug-eluting stents. Only 1 patient died due to cardiogenic shock. All 108 patients were followed up for 3 years, and they are receiving adjuvant highly active antiretroviral therapy (HAART).

**CONCLUSIONS** HIV-associated atherosclerosis and its complications are a significant human health burden for which the pathogenesis remains elusive. The distinct pathological features of HIV-induced atherosclerosis are non-calcified and inflammatory plaques that are

more vulnerable to rupture, resulting in ACS. HIV-infected patients hospitalized for an ACS are relatively younger. Anterior wall STEMI is the most common presentation; hence, the left anterior descending artery is the most common culprit vessel. HIV status and HAART didn't interfere with revascularization approach or clinical outcome.

**CRT-100.07**

**Clinical Outcomes Among Patients Requiring Acute Mechanical Circulatory Support for Cardiogenic Shock Supported by Impella or VA-ECMO**



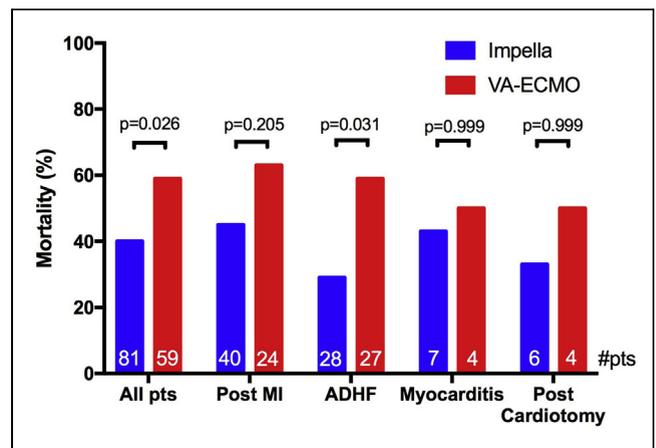
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**BACKGROUND** Clinical trials for acute mechanical circulatory support (AMCS) for cardiogenic shock (CS) have exclusively focused on patients with acute coronary syndrome (ACS). Outcomes for patients supported with AMCS for other indications have not been well-described.

**METHODS** We retrospectively analyzed all patients (n=140) between 2012-2016 receiving veno-arterial extra corporeal membrane oxygenation (VA-ECMO) (n=59) or Impella (n=81) for CS at two institutions.

**RESULTS** The indications for AMCS were acute ACS (46%: STEMI 30% and NSTEMI 70%), acute decompensated heart failure (ADHF) (39%), myocarditis (8%) and post-cardiotomy CS (7%). Compared to VA-ECMO, Impella patients were older (59±14 vs. 54±12 years, all comparisons p<0.01) and more likely to have hypertension (57% vs. 24%). Impella patients had a lower lactate (3.3±2.7 vs. 7.1±5.8 mEq/L), higher pH (7.33±0.17 vs. 7.24±0.16) and higher MAP (72±15 vs. 61±15 mmHg) compared to VA-ECMO. The median duration of support was longer for VA-ECMO than Impella (7.4 days vs. 5 days, p=0.026). In-hospital mortality across indications was lower for Impella than VA-ECMO (40% vs. 59%, p=0.03; Figure). Compared to VA-ECMO, mortality was lower with Impella for ADHF (31% vs. 57%, p=0.037).

**CONCLUSION** For patients with CS supported by AMCS, mortality is lower for patients supported with Impella, particularly for ADHF, although indices of CS severity are worse among VA-ECMO recipients. Investigation of outcome predictors for AMCS recipients is warranted.



**CRT-100.08**

**Coronary Perfusion Pressure and Left Ventricular Hemodynamics as Predictors of Cardiovascular Collapse following Percutaneous Coronary Intervention**



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**BACKGROUND** Percutaneous mechanical circulatory support (MCS) continues to evolve. Appropriate patient selection for MCS following percutaneous coronary intervention (PCI) remains a challenge. There may be a role for MCS prior to the development of shock to help