

increased mortality, irrespective of the presentation. Substantial patients with STEMI experience no chest pain and are given a low priority score at the triage of emergency department. We aimed to determine the impact of non-chest pain complaint as a presenting symptom on the DTB time and clinical outcomes in patients with STEMI.

Methods: A total of 11,417 STEMI patients who underwent primary PCI were derived from the Korea Working Group on Myocardial Infarction from 2005 to 2012 and compared according to typical chest pain or non-chest pain complaint as a presenting symptom. The primary outcomes were 12-month mortality and the composite of major adverse cardiac events (MACE, defined as death, non-fatal myocardial infarction, and revascularization).

Results: Compared to patients with typical chest pain (n=9,948, 87.1%), patients with non-chest pain complaint (n=1,469, 12.9%) were older, more female, and had higher incidence of hypertension and diabetes, and also had higher incidence of anterior infarct and higher Killip class. The time delay was also significant in door-to-laboratory arrival time (53 vs. 64 min, p<0.001), laboratory arrival-to-balloon (20 vs. 23 min, p<0.001), and the DTB time (75 vs. 89 min, p<0.001). Non-chest pain complaint was an independent determinant of the DTB time both in adjusted models and in multivariate linear regression analysis. Patients with non-chest pain complaint had more in-hospital death (4.1% vs. 11.5%, p<0.001), 12-month mortality (6.5% vs. 16.3%, p<0.001), and the composite of MACE (12.2% vs. 22.5%, p<0.001).

Conclusions: The delays in identification of STEMI and reperfusion treatment were greater and associated with worse clinical outcomes in patients with non-chest pain complaint as a presenting symptom. A triage using electrocardiogram should be considered in these patients.

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Which is the Ideal Revascularization Strategy in Patients Presenting with Acute Coronary Syndrome and Proximal LAD Stenosis? Results from the ACUTY Study

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Background: Proximal LAD (pLAD) lesions are associated with increased cardiovascular risk in the setting of acute coronary syndrome (ACS). Surgical versus percutaneous revascularization improves outcomes including mortality in complex stable CAD. However, the impact of different revascularization strategies in ACS patients with pLAD lesions remains unknown.

Methods: We performed a post-hoc analysis of patients in the ACUTY trial (n=13,819) presenting with a critical stenosis of the pLAD who underwent subsequent revascularization with a surgical or percutaneous approach (PCI). Major adverse events comprised of death, myocardial infarction, repeat revascularization, stroke, and bleeding were compared at 30 days and 1-year.

Results: Among the 842 patients we studied, revascularization was performed with PCI and coronary artery bypass grafting (CABG) in n=562 (67%) and n=280 (33%) respectively. Baseline clinical and angiographic characteristics were well balanced between groups. Patients in the CABG group were more likely to undergo angiography later than PCI (median time first drug-angiography, 43 vs. 4 hours, P<0.01). PCI was associated with an increase rate of revascularization at 1 month and 1 year, without significant difference in other clinical endpoints (Table 1).

Conclusions: Although surgical revascularization of proximal LAD during ACS reduces further revascularization, it does not seem to improve the survival and MI rates at 1-year compared with PCI.

	PCI (n=560)	CABG (n=280)	P value
1-month outcomes			
MACE (death, MI, revascularization)	13.4%	15.4%	0.46
NACE (death, MI, revascularization, and major bleeding)	19.1%	17.5%	0.45
All-Cause Mortality	2.1%	3.6%	0.22
Myocardial Infarction	10.2%	12.7%	0.33
Unplanned Revascularization	4.3%	1.4%	0.03*
Stroke	0.2%	0.7%	0.26
1-year outcomes			
MACE	22.4%	19.7%	0.49
Death or MI	15.4%	16.4%	0.65
All-Cause Mortality	4.3%	4.7%	0.72
MI	12.7%	13.1%	0.88
Unplanned Revascularization	12.7%	5.2%	0.001*
TLR	8.5%	n/a	

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Safety and efficacy of Bivalirudin monotherapy in patients with non-ST segment elevation myocardial infarction undergoing PCI: Results from the ACUTY Study

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Background: There are limited data on the effects of bivalirudin monotherapy compared to standard antithrombotic therapy (heparin plus glycoprotein IIb/IIIa inhibitor – GPI) on the outcomes of higher –risk acute coronary syndromes (ACS) patients with positive biomarkers on admission. We examined the clinical outcomes among positive biomarker patients undergoing percutaneous coronary intervention (PCI) in the large-scale prospective, randomized ACUTY trial.

Methods: The ACUTY trial was a multicenter, randomized trial assessing the safety and efficacy of bivalirudin alone or bivalirudin plus GPI vs. heparin plus GPI among 13,819 patients with moderate and high-risk ACS, 7,789 of whom underwent PCI. The in-hospital and 30-days primary endpoints were composite ischemia (death, MI, or unplanned TVR for ischemia), Non-CABG major bleeding, and net adverse clinical events (NACE=composite ischemia or major bleeding).

Results: A total of 4,728 PCI patients presented with a positive biomarker at the time of admission. Of those, 1,532 were randomized to heparin plus GPI and 1,611 to bivalirudin alone. There were no relevant baseline differences between treatment groups regarding clinical profile, TIMI risk score, antiplatelet medications and DES use. Outcomes by treatment group at 30-days and 1-year are shown in the table. In a multivariate model, use of bivalirudin was not a predictor of composite ischemic outcomes up to one year (hazard ratio [95% CI]=1.12 [0.97, 1.29], p=0.1239), but was associated with a reduction in major bleeding.

	Heparin + GPI N=1532	Bivalirudin alone N=1611	p value
30-days			
Mortality	0.9%	1.5%	0.14
MI	5.8%	7.2%	0.0958
Urgent TVR	2.4%	2.1%	0.5720
NACE	13.5%	12.6%	0.4482
Composite ischemic outcome	8.2%	9.3%	0.3001
Non-CABG major bleeding	7.1%	4.1%	0.0002
1-year			
Mortality	4.0%	3.8%	0.8293
Composite ischemic outcomes	17.4%	19.0%	0.0629

Conclusions: Among the higher-risk cohort of patients with positive biomarkers within the ACUTY trial, bivalirudin monotherapy (compared with heparin + GPI) was associated with similar risk of ischemic events and significant reduction of major bleeding at 30 days and 1 year in patients undergoing PCI.

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Comparable low rates of MACE between patients with ST-segment elevation myocardial infarction (STEMI) and non-STEMI (NSTEMI) patients in the 12-month follow-up of the e-BioMatrix registry

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Background: The efficacy and safety of drug-eluting stents in STEMI patients is still controversial and implantation of a bare-metal stent (BMS) is commonly preferred in this patient population. The COMFORTABLE AMI trial has recently shown that, in STEMI patients, a Biolimus A9™-eluting stent with biodegradable polymer (BES) is more effective and safer compared to BMS after 2 years follow-up. The e-BioMatrix registry has evaluated the long-term safety and efficacy of BES in a large real-world patient population including patients with ST elevation myocardial infarction (STEMI), non-ST elevation myocardial infarction (NSTEMI) and stable ischemic heart disease (SIHD).

Methods: A total number of 959 STEMI, 1810 NSTEMI and 2785 SIHD patients were enrolled. The primary endpoint was MACE, defined as a composite of cardiac death, MI and clinically-indicated TVR at 12 months. Secondary endpoints were MACE at 30 days, 6 months, 2, 3, and 5 years, ARC defined stent thrombosis and total revascularization rates at 30 days, 6 months and 12 months, 2, 3, and 5 years. DAPT was mandatory for 6 months and recommended up to 12 months.

Results: MACE rates at 12 months were similar in all 3 patients groups: STEMI (3.9%), NSTEMI (4.7%) and SIHD (4.2%) p=NS. The rates of definite stent thrombosis (ST) were also low in all 3 groups: STEMI (1.0%), NSTEMI (0.4%), SIHD (0.4%) (STEMI vs. SIHD (p=0.046), all other pairwise comparisons were NS). The complete analysis of the outcomes is ongoing.

Conclusions: The use of Biolimus A9-eluting stents is safe and efficient in STEMI, NSTEMI and SIHD patients at 12-months follow-up. The complete analysis will be reported for the first time during this presentation.

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Left anterior descending artery that wraps around the apex is associated with apical remodeling and subsequent heart failure in patients with anterior ST-Elevation MI: An INFUSE-AMI sub-study

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Background: The impact of left anterior descending artery (LAD) length on left ventricular (LV) remodeling in pts with anterior ST-elevation myocardial infarction (STEMI) has not been fully investigated.

Methods: INFUSE-AMI was an open-label, 2x2 factorial, randomized, multicenter, single-blind evaluation of bolus intralesion abciximab and manual aspiration thrombectomy in pts undergoing bivalirudin supported primary PCI for anterior STEMI. Among 452 enrolled pts, 372 pts with available cardiac magnetic resonance imaging (cMRI) at 30 days were categorized based on coronary angiography as having an LAD that supplied inferior wall myocardium vs. an LAD that terminated at

or before the apex. Major adverse cardiac and heart failure events (MACHFE) were death, reinfarction, new onset severe heart failure, or rehospitalisation for heart failure.

Results: Because of poor final TIMI flow (0/1) or poor angiography quality, LADs in 19 pts could not be categorized. Among the remaining 353 pts, 206 (58%) had an LAD that wrapped around the apex. Although the time from symptom-onset to first device was significantly shorter in LADs that wrapped around the apex and although the frequency of proximal occlusion location and % infarct mass were similar, LV end diastolic and systolic volumes (assessed by cMRI) at 30 days were larger than in pts with LADs that terminated before the apex (Table). At 1 year, the rates of MACHFE as well as new onset of severe heart failure and rehospitalisation for heart failure were significantly higher in pts with LADs that wrapped around the apex compared to pts with LADs that terminated before the apex.

Conclusions: LAD length is an important determinant of prognosis in pts with anterior STEMI. In these pts, an LAD that wraps around the apex to supply inferior wall myocardium is associated with unfavourable LV remodeling and subsequent heart failure.

	LAD that wrapped around the apex (n=206)	LAD that terminated at or before the apex (n=147)	p-value
Time from symptom onset to first device (min)	146 [119, 200]	158 [127, 222]	0.05
Occlusion at proximal LAD	48.3%	51.7%	0.53
Pre PCI TIMI flow grade 0 or 1	68.4%	74.8%	0.19
Final TIMI flow grade 3	94.2%	89.8%	0.13
% infarct mass of LV mass (%) at 30 days	17.1 [7.9, 24.5]	16.8 [7.2, 22.8]	0.30
LV end diastolic volume (mL) at 30 days	181 [150, 213]	166 [142, 197]	0.05
LV end systolic volume (mL) at 30 days	89 [68, 117]	81 [64, 105]	0.06
MACHFE	8.9% (18)	3.4% (5)	0.05
New onset of severe heart failure	6.9% (14)	2.0% (3)	0.04

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The Systolic Function Was Improved But Diastolic Function Was Not Improved After STEMI Treated With Primary PCI

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Background: Long term prognosis of left ventricular (LV) systolic function was well known but LV diastolic function in patients with ST segment elevation myocardial infarction (STEMI) who underwent primary percutaneous coronary intervention (PCI) was not studied well.

Methods: A consecutive 325 patients treated with primary PCI. Transthoracic echocardiography was performed within 24 hour after PCI and at 12 months follow-up. The indices of LV systolic function (LV ejection fraction-EF, wall motion score index-WMSI), LV diastolic function (The ratio of the transmitral and myocardial early diastolic velocities (E/Em)) and LV dimension were measured.

Results: At 12 month follow-up, we observed the significant improvement of LVEF (49.1±9.8 % to 53.9±10.3 %, p < 0.01), the decrease of WMSI (1.42±0.36 to 1.33±0.37, p < 0.001) and significant decrease in LV end diastolic dimension (52.1 ± 6.6 to 49.8±6.8). But, there was no significant difference but numerically worsening LV diastolic function (E/Em 12.7±5.4 to 13.6 ±7.8, p=0.38).

Conclusions: The LV systolic function was improved but LV diastolic function was not improved after STEMI treated with primary PCI.