

Methods: Data on hospitalizations for STEMI from 2000 through 2010 were extracted from hospital discharge record databases from all hospitals in Lombardia (a Northern Italy region with high density population). Main outcome measures were in-hospital mortality and treatment modality by sex. Treatment modalities included medical therapy alone or an invasive approach, the latter consisting of coronary angiography alone, percutaneous coronary intervention (PCI), or coronary artery bypass graft surgery. Multivariable logistic regression was performed to assess the impact of female sex and of treatment modality on mortality after adjusting for age, and comorbidities.

Results: A total of 92807 patients with STEMI, 66.4% men and 33.6% women were enrolled. Women were older than men (mean 75.1 yrs vs 64.1 yrs, $p<0.0001$) and had a higher prevalence of chronic renal failure ($p<0.001$). In-hospital mortality presented a small decrease from 7.5% in 2000 to 6.3% in 2010 among men, while it remained higher and substantially constant over time among women (16.4% in 2000, 16.2% in 2010). The use of an invasive approach increased over time in both sexes (from 55% in 2000 to 91% in 2010 in men and from 36% in 2000 to 70% in 2010 in women). The use of PCI increased from 32% in 2000 to 82% in 2010 in men; and from 21% in 2000 to 57% in 2010 in women. At multivariable regression, an invasive approach (odds ratio (OR) 0.23, 95% confidence interval (CI), 0.21-0.25, $p<0.001$) was associated with a significant reduction in mortality, while female sex was not a predictor of mortality (OR 0.96, $P=0.18$).

Conclusions: In-hospital mortality remains higher in women than in men, although female sex is not a significant predictor of mortality. Despite temporal increases in the use of an invasive approach, women are more often treated conservatively.

TCT-246

Characterization of the Actuarial Daily Ischemic Risk in the First Year Following ST-Segment Elevation Myocardial Infarction: Analysis from the HORIZONS-AMI Trial

Efthymios Deliargyris¹, Debra Bernstein², Sorin Brener³, Philippe Genevex⁴, Ajay J. Kirtane⁵, Roxana Mehran⁶, Jayne Prats¹, Simona Skerjanec², Gregg W. Stone⁷

¹The Medicines Company, Parsippany, NJ, ²The Medicines Company, Parsippany, NJ, ³Cardiovascular Research Foundation, New York, NY, ⁴Cardiovascular Research Foundation, New York, NY, ⁵Columbia University / Cardiovascular Research Foundation, New York, NY, ⁶Mount Sinai Hospital, New York, NY, ⁷Cardiovascular Research Foundation, NY, NY

Background: The risk for recurrent ischemic events following ST-segment elevation myocardial infarction (STEMI) gradually declines. However, current guidelines suggest consistent therapy from presentation out to 12 months. We sought to characterize the actuarial daily ischemic risk (ADIR) in the 12 months year after STEMI.

Methods: Ischemic event rates for all 3602 patients enrolled in the prospective HORIZONS-AMI trial were categorized according to the timing of their occurrence in three groups: Group 1: during index hospitalization, Group 2: from hospital discharge to 30 days, and Group 3: from 30 days post hospital discharge to 1 year. Ischemic events included: All-cause death, cardiovascular (CV) death, non-CV death, re-infarction (MI), definite ST and the composite of CV death, MI or definite ST. The ADIR for each event was calculated based on the actual patient days of follow-up for each group.

Results: Highly significant reductions in ADIR were observed as patients transitioned from Group 1 to Groups 2 and 3 respectively (Table). The degree of ADIR reduction approached or exceeded a full order of magnitude for all events except for non-CV death. Accordingly, the relative risk for the composite of CV death, MI or definite ST was 15.20 (11.39 - 20.27, $p<0.0001$) for Group 1 vs. Group 2, 6.31 (4.62 - 8.62, $p<0.0001$) for Group 2 vs. Group 3 and 95.94 (76.06 - 121.02, $p<0.0001$) for Group 1 vs. Group 3.

Conclusions: Conclusions: The risk for CV death and recurrent ischemic events following an index STEMI treated with primary PCI dramatically declines following hospital discharge out to the first 30 days and declines even further between day 30 and one year. These data suggest that a tailored approach to anti-ischemic protection, with more potent agents administered in the acute and sub-acute phases and less potent agents (with lower bleeding potential) administered after 30 days, warrants investigation.

Table. Actuarial daily ischemic risk (ADIR) in 3 successive periods after index hospitalization for STEMI

ENDPOINT	Index hospitalization	Discharge to 30 Days	30 Days to 1 year
All-cause death	78/21510 (0.3626%)	22/104397 (0.0211%)	59/1220907 (0.0048%)
CV death	71 / 21510 (0.3301%)	17 / 104397 (0.0163%)	29 / 1220907 (0.0024%)
Non-CV death	7 / 21510 (0.0325%)	5 / 104397 (0.0048%)	30 / 1220907 (0.0025%)
Re-infarction (MI)	44 / 21510 (0.2046%)	27 / 104397 (0.0259%)	84 / 1220907 (0.0069%)
Definite ST	76 / 21510 (0.3533%)	17 / 104397 (0.0163%)	0 / 1220907 (0.0000%)
CV death + MI + Definite ST	191 / 21510 (0.8880%)	61 / 104397 (0.0584%)	113 / 1220907 (0.0093%)
Trend p-values <0.0001 for all endpoints. All pairwise p-values <0.0001, except $p=0.16$ for Group 2 vs. Group 3 non-CV death.			

TCT-247

Effects on Infarct Size, Microvascular Obstruction, Left Ventricular Volumes and Function of Manual Thrombus Aspiration and Rheolytic Thrombectomy in Acute Myocardial Infarction: 1-year SMART-MRI substudy

Nazario Carrabba¹, Guido Parodi¹, Akiko Maehara², Angela Migliorini¹, Silvia Pradella³, Renato Valenti¹, Ruben Vergara⁴, Stefano Colagrande⁵, Gary S. Mintz⁶, David Antoniucci⁷

¹Careggi Hospital, Florence, Italy, ²Cardiovascular Research Foundation and Columbia University Medical Center, New York, United States, ³Division of Radiology, Careggi Hospital, Florence, Italy, ⁴Division of Cardiology - Careggi Hospital, Florence, Italy, ⁵Division of Radiology, Careggi Hospital, Florence, Italy, ⁶Cardiovascular Research Foundation, Washington, DC, ⁷Careggi Hospital, Florence, Italy, Florence, Italy

Background: We sought to analyze in ST-elevation myocardial infarction (STEMI) patients the impact of rheolytic thrombectomy (RT) in comparison to manual thrombus aspiration (MTA) on extension of microvascular obstruction (MVO) and infarct size (IS) as well as on 1-year left ventricular (LV) volumes and ejection fraction (EF) by cardiac magnetic resonance imaging (MRI).

Methods: Eighty STEMI patients (≤ 6 hours from symptom onset) reperfused by primary angioplasty with routine abciximab therapy were randomly allocated (1:1) to a RT or MTA. MRI was performed within 10 \pm 6 days in 37 patients (19 RT, 18 MTA), and after 1 year in 19 patients (9 RT). IS and MVO were measured 15 min after gadolinium injection with late enhancement sequences and were analyzed quantitatively (as percentage of the left ventricular mass -gr/LV mass-) at a core laboratory blinded to randomization.

Results: Baseline clinical characteristics were similar between the RT and MTA groups, as well as baseline TIMI thrombus grade (4.47 \pm 0.84 vs. 4.67 \pm 0.76, $p=0.453$). After thrombectomy, in RT compared with MTA group the thrombus grade decreased to 1.11 \pm 1.04 vs. 2.17 \pm 1.29 ($P=0.04$), and after infarct artery stenting TIMI 3 flow was 100% vs. 89% ($P=0.204$), and ST-elevation resolution greater than 70% at 60 minutes was 89% vs. 72% ($P=0.198$), respectively. RT compared with MTA group did not reduce significantly myocardial IS [12.2% (6.4-22.1) vs. 19.0% (7-28.5), $P=0.224$] as well as the extent of MVO [0.0% (0.0-0.17) vs. 0.6% (0.0-1.4), $P=0.117$], but a trend towards a lower incidence of MVO was observed (16% vs. 44%, $P=0.056$). At 1-year, the IS did not change [RT 13.2% (6.4-22.1) vs. MTA 11.4% (6.5-27.8), $P=0.253$] and the recovery (baseline-1-year) of LV EF was not different in both groups (RT 1.9 \pm 4.5% vs. MTA 1.1 \pm 8.3%, $P=0.626$), with a reduction of LV volumes found only in RT group (EDV: RT -9.3 \pm 15 ml vs. MTA 9 \pm 29.8 ml, $P=.115$; ESV: RT -8.5 \pm 15.2 ml vs. MTA 3.1 \pm 20.3 ml, $P=.180$, respectively).

Conclusions: In setting of STEMI, at 1-year RT in comparison to MTA did not reduce significantly the IS. However a more favorable change of LV volumes was found, likely due to a more effective thrombus removal and a lower incidence of MVO by RT.

TCT-248

Immediate Stenting in Comparison with Surgical Revascularization Strategy in Patients with Non-ST Elevation Acute Coronary Syndrome and Multivessel Coronary Artery Disease - The MILESTONE Registry.

Piotr P. Buszman¹, Andrzej Bochenek¹, Marek Gierlotka², Mariusz Gasior², R. Stefan Kiesz³, Krzysztof P. Milewski⁴, Wojciech Wojakowski⁵, Marian Zembala², Lech Polonski², Buszman E. Pawel⁶

¹American Heart of Poland, Katowice, Poland, ²Medical University of Silesia, Silesian Center for Heart Diseases, Zabrze, Poland, ³Clinical Associate Professor of Medicine at UTHSC in San Antonio, San Antonio, TX, ⁴American Heart of Poland, Katowice, Silesia, ⁵Medical University of Silesia, Katowice, Poland, ⁶American Heart of Poland, Ustroń, Poland

Background: The optimal revascularization strategy in patients with multivessel and left main coronary artery disease (MVD, LMD) presenting with non-ST acute coronary syndrome (NSTE-ACS) is undetermined.

Methods: In this multicenter, prospective registry, 4566 patients with non-ST elevation myocardial infarction (NSTEMI), unstable angina and MVD including LMD were enrolled. Following angiography, 3033 patients were assigned for stenting (10.3% DES), whereas 1533 for CABG. The complete follow-up on mortality was obtained at 3 years.

Results: In the overall population, patients assigned for PCI were younger (64.4 \pm 10 vs. 65.2 \pm 9 $p=0.03$), more frequently presented with NSTEMI (32.0 vs. 14.5%; $p=0.01$), cardiogenic shock (1.5 vs. 0.7% $p<0.01$) history of prior PCI (13.1 vs. 5.5%; $p<0.01$) and CABG (10.6 vs. 4.6%, $p<0.01$). The Euroscore and TIMI risk score were slightly higher in PCI patients (5.36 \pm 2.3 vs. 5.16 \pm 2.0 and 3.87 \pm 1.0 vs. 3.79 \pm 0.9 respectively, $p<0.01$). Patients assigned to CABG more often presented with triple and LMD (82.2 vs. 33.8% and 13.7 vs. 2.4%; $p<0.01$). Otherwise, proximal LAD was more often stented (21.5 vs. 11.1%; $p<0.01$). After adjustment 929 well-matched pairs were selected. Early mortality was lower after PCI prior to matching (2.1 vs. 3.1%; $p<0.01$), whereas after balancing, no difference was found (2.5 vs. 2.8%; $p=0.62$). Three year survival was in favor of PCI when compared to surgery prior (87.5 vs. 82.8%, HR: 1.44, 95%CI: 1.2-1.7) and after matching (86.4 vs. 82.3%, HR 1.33, 95%CI: 1.05-1.7 and $p=0.01$). Stenting was associated with