deployment of the stent and uncovered plaque remains the main cause of SST.

**CATEGORIES CORONARY**: Acute Coronary Syndromes

**KEYWORDS** ST- Stent Thrombosis

**TCT-174**
Baseline hemoglobin level, anemia and adverse events in patients with acute coronary syndromes; Lessons from ACUITY and HORIZONS-AMI

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**BACKGROUND** The association between anemia at admission and adverse outcome in patients with acute coronary syndromes (ACS) has been recently emphasized. A more granular analysis between baseline hemoglobin and adverse events has not been reported.

**METHODS** Anemia was defined as serum hemoglobin <12 g/dl in women and <13 g/dl in men in two large ACS trials - ACUITY and HORIZONS-AMI. We plotted gender-specific hazard functions for all-cause mortality at 1 year and major bleeding at 30 days according to baseline hemoglobin, and analyzed time to events according to tertiles of hemoglobin.

**RESULTS** Among 16,421 patients, 2,558 (15.6%) had anemia at baseline. Patients with anemia were older, more often women, and had higher rates of CAD risk factors. They were also significantly more likely not to undergo revascularization. The hemoglobin level on admission was 11.7±1.0 g/dl in anemic and 14.6±1.2 g/dl in non-anemic patients (P<0.001). The incidence of ischemic events in the two groups is shown in Table 1. Death and MI were significantly more common in anemic patients at 30 days and at 1 year, while rates of ST, TLR and TVR were similar. Non-CABG major bleeding was 2x as common in the anemic patients (8.4% vs. 3.6%, P<0.001), and transfusions were administered 5x more often (7.5% vs. 1.5%, P<0.001). Patients in the highest tertile of hemoglobin (~14.8 g/dl) has the lowest 1-year mortality, compared with the middle tertile (13.5-14.8 g/dl) and lowest tertile (~13.5 g/dl): 3.0% vs. 3.4% vs. 5.8%, P<0.0001, respectively. There was no significant difference between the middle and highest tertile of baseline hemoglobin (P=0.08). Gender-specific spline transformations of the hazard for death at 1 year as a function of hemoglobin level on admission showed that the lowest mortality was observed at a baseline hemoglobin level of 14.6 g/dl for men and 13.2 g/dl for women. Below and above these levels mortality increased (U-shaped curve). The lowest rate of major bleeding events occurred at similar hemoglobin levels as for mortality.

**CONCLUSIONS** Baseline hemoglobin carries important prognostic information and appears to have a non-linear association with both death and major bleeding events. The risk for mortality and major bleeding increases with hemoglobin levels below and above 14.6 g/dl for men and 13.2 g/dl for women.

**CATEGORIES CORONARY**: Acute Coronary Syndromes

**KEYWORDS** Adverse events, Anemia

**TCT-175**
Temporal Changes in Clinicopathologic Features of Ischemic Cardiac Rupture

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**BACKGROUND** The temporal changes in the clinicopathological characteristics of cardiac rupture (CR) are ill-defined.

**METHODS** 187 consecutive decedents with acute myocardial infarction (AMI) and fatal CR of the left ventricular free wall and/or septum whose autopsies were performed at Mayo Clinic between 1986 and 2012 were included and their clinical and autopsy characteristics were studied. Overall autopsies were divided into three groups: group 1 (N=100) (1986-1995); (N=49) group 2, (1996-2004); and group 3 (N=38) (2005-2012).

**RESULTS** Median age of decedents at CR did not change from between the 3 groups (76, 76, 72; p=0.35), however, the prevalence of hypertension and prior MI decreased with time. The most common clinical and anatomical site of CR in groups 2 and 3 were at the edge of an inferolateral infarct (Fig 1). Median infarct age remained the same (Table 1). Plaque rupture was seen less commonly, however, severe atherosclerosis was more prevalent in groups 2 and 3.

**Table 1**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group 1 (N=100)</th>
<th>Group 2 (N=49)</th>
<th>Group 3 (N=38)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median</td>
<td>76</td>
<td>76</td>
<td>72</td>
<td>0.35</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>49%</td>
<td>55%</td>
<td>53%</td>
<td>0.77</td>
</tr>
<tr>
<td>Hypertension</td>
<td>72%</td>
<td>65%</td>
<td>50%</td>
<td>0.12</td>
</tr>
<tr>
<td>Diabetes</td>
<td>21%</td>
<td>31%</td>
<td>21%</td>
<td>0.53</td>
</tr>
<tr>
<td>Smoking history</td>
<td>31%</td>
<td>36%</td>
<td>55%</td>
<td>0.26</td>
</tr>
<tr>
<td>Prior MI</td>
<td>22%</td>
<td>19%</td>
<td>0</td>
<td>0.07</td>
</tr>
<tr>
<td>Presentation with chest pain</td>
<td>75%</td>
<td>77%</td>
<td>40%</td>
<td>0.007</td>
</tr>
<tr>
<td>3 vessels with Grade 4 atherosclerosis</td>
<td>29%</td>
<td>41%</td>
<td>51%</td>
<td>0.035</td>
</tr>
<tr>
<td>Plaque rupture not seen</td>
<td>19%</td>
<td>48%</td>
<td>74%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Acute thrombus</td>
<td>80%</td>
<td>70%</td>
<td>66%</td>
<td>0.21</td>
</tr>
<tr>
<td>Infarct site</td>
<td></td>
<td></td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td>- Anterior</td>
<td>45%</td>
<td>33%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>- Inferior</td>
<td>35%</td>
<td>41%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>- Lateral</td>
<td>19%</td>
<td>27%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Median infarct age, days</td>
<td>4</td>
<td>3.5</td>
<td>4</td>
<td>0.08</td>
</tr>
<tr>
<td>Rupture Site with Infarct</td>
<td></td>
<td></td>
<td></td>
<td>0.52</td>
</tr>
<tr>
<td>Central</td>
<td>32%</td>
<td>43%</td>
<td>42%</td>
<td></td>
</tr>
<tr>
<td>Peripheral</td>
<td>65%</td>
<td>57%</td>
<td>58%</td>
<td></td>
</tr>
</tbody>
</table>
CONCLUSIONS CR was seen more commonly in elderly men at pe- riphery of inferolateral location 4 days after AMI in recent groups. Plaque rupture is less common; however, severe three vessel coronary artery disease is seen more frequently.

CATEGORIES CORONARY: Acute coronary syndromes

TCT-176

Staged Versus “One-time” multivessel revascularization in patients with non-ST-segment elevation acute coronary syndromes

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BACKGROUND To compare the long-term clinical outcomes of staged percutaneous coronary intervention (PCI) and “one-time” PCI in pa- tients with non-ST-segment elevation acute coronary syndromes (NSTE-ACS) and multivessel coronary disease (MVD).

METHODS From 2009 to 2012, a total of 1414 consecutive NSTE-ACS pa- tients that underwent PCI of culprit and nonculprit lesions for multivessel disease in General Hospital of Shenyang Military Region were prospec- tively registered. Patients received “one-time” PCI (n=822) or staged PCI (n=592) according to physician’s discretion. The primary outcome was the composite of cardiac death or myocardial infarction (MI).

RESULTS Baseline and angiographic characteristics showed staged patients had a worse clinical presentation. The estimated 3-year composite rate of cardiac death or MI was 6.2% for staged PCI, 6.8% for “one-time” PCI (log-rank test: p=0.536). At multivariate analysis, staged PCI was an independent predictor of cardiac death or MI (hazards ratio [HR]:0.581, 95% confidence interval [CI]:0.356-0.948, p=0.022). In a propensity score matched cohort, staged PCI was associated with a significantly lower risk of cardiac death or MI compared to “one-time” PCI (4.5% vs 8.8%, HR 0.466, 95% CI: 0.247-0.879, p=0.016). Subgroup analysis suggested staged PCI might be considered in patients with high risk such as old age, renal dysfunc- tion, diabetes mellitus, previous MI or high GRACE risk score.

CONCLUSIONS Staged PCI is optimal revascularization strategy for patients with NSTE-ACS, especially high-risk patients, with a lower composite of cardiac death or MI compared to “one-time” PCI. Ran- domized-control trial was needed to confirm this result.

CATEGORIES CORONARY: Acute coronary syndromes

KEYWORDS Multivessel percutaneous coronary intervention, Non-ST-segment elevation acute coronary syndromes

TCT-177

Old Saphenous Vein Grafts with important degeneration treated with self-expandable drug-eluting stents: our experience

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BACKGROUND The percutaneous treatment of the obstructive atherosclerotic disease in coronary saphenous bypass grafts remains a challenge in interventional cardiology. Treatment of degenerated saphenous vein grafts still involves a high risk of immediate embolic complications, high incidence of target lesion revascularization and progression of the disease on adjacent segments and often difficulty in the evaluation of the caliber and discrepancy in size in presence of aneurysm. Aim: to evaluate if the use of self-expandable stents may offer an advantage compared to balloon-expandable stents.

METHODS Self-expandable stents may solve the problem of the discrepancy in size, they can be used in presence of aneurysms or of widespread disease of the graft implying a lower risk of malapposition, with less acute thrombosis. They don’t require a heavy post-dilatation implying a lower risk of thromboembolism and parietal damage and less often a reduced risk of in-stent restenosis, edge- restenosis and deterioration of adjacent segments. At this purpose we adopted the “Soft touch technique” which consists in direct stenting (if possible) and postdilatation limited to the most stenotic portion of the graft using undersized balloons (ratio balloon /vessel diameter, 0.8). Self expand- able stents increase in diameter in the days following the procedure, this may reduce the incidence of plaque rupture and distal embolization.

RESULTS Between October 2012 and May 2015 we treated 25 patients. 16 patients presented with acute coronary syndrome with evidence of soft plaque and intraluminal thrombus. Mean age of the grafts: 12 years (4-21 years). In 10 cases we used a distal embolic protection filter. A patients had an unexpected dilation of the graft (ratio diameter of the vessels between 6 and 7 mm). No major complications occurred. In one case we implanted a balloon expandable stent at distal edge of self-expandable stent for distal dissection of the vessel with a good final result. In one case we experienced an in-stent restenosis due to distoration of the stent struts caused by the guidewire. This ostial lesion was treated successfully with a balloon-expandable stent implantation. Good angiographic result in all cases (final TIMI flow III). Cardiovascular computed tomography performed after 3 months confirmed the patency of the stents. All patients remained asymptomatic during follow-up.

CONCLUSIONS The treatment of degenerated coronary saphenous vein grafts with self-expandable stents and “soft touch technique”, being less aggressive on the graft, may reduce the risk of distal embolization and therefore of periprocedural infarction. This tech- nique, implying a minor parietal trauma, may also reduce the inci- dence of restenosis and solve the problem of mismatch of caliber and widespread disease preventing the implantation of additional stents. Larger and appropriate studies are needed to determine differences, optimize clinical practice and validate our hypothesis.

CATEGORIES CORONARY: Acute coronary syndromes

KEYWORDS Saphenous vein graft, Self-expanding stent, STENTYS

TCT-178

Spontaneous coronary artery dissection (SCAD): Predictors and Long-term outcome


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BACKGROUND Spontaneous coronary artery dissection (SCAD) is an unusual cause of acute coronary syndrome. Although the prognosis is good the management is not well established. Our purpose was to describe the clinical presentation, management and long-term-out- comes of a retrospective cohort with SCAD.

METHODS A total of 37 patients registered in our institution from 2000 to 2014 were retrospectively studied. The definition of SCAD was based on the presence of medial dissection or intramural hematoma that was recognized by angiography and according with the classifi- cation proposed by Saw.

RESULTS 37 patients diagnosed as SCAD (male/female 15/22, age 54±12 [SD] years) were included in the analysis. The clinical presentation was myocardial infarction in 86.5% of patients. SCAD developed after physical or emotional stress in 4 patients (10%) and 7 patients (19%) had hypothyroidism. The left anterior descending ar- tery was involved in 22 patients (60%) and left main was involved in 1 patient. 5 patients had multi-vessel SCAD (13.5%). Recurrences of SCAD were shown in 2 patients (5%). According to the classification proposed by Saw 21 patients (57%) had type I dissection (evident intramural wall stain), 11 patients (30%) had type II (diffuse thickness of varying severity) and 5 of them (13%) had type 3 (mimic atheroscle- rosis) dissection. Coronary artery tortuosity was present in 17 patients (46%) and it is significantly related with MACE (p = 0.001) and complica- tions during PCI (p = 0.001). The management of SCAD was