TCT-105
Impact of Tissue Prolapse on Short- and Long-Term Clinical Outcomes after Stent Implantation in Patients with Acute Myocardial Infarction: An Intravascular Ultrasound Analysis

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Background: The impact of tissue prolapse (TP) on clinical outcomes after stent implantation is still not well known. We used intravascular ultrasound (IVUS) to evaluate the association of TP with short- and long-term clinical outcomes after stent implantation in 418 acute myocardial infarction (AMI) patients (155 ST segment elevation and 263 non-ST segment elevation MI).

Methods: TP was defined as tissue extrusion through the stent strut at post-stenting. We evaluated the incidences of stent thrombosis, no-reflow, and long-term clinical outcomes.

Results: After stenting, TP was detected in 34% without difference according to the stent types. Acute and subacute stent thromboses occurred more frequently in patients with TP compared with those without TP (3.5% vs. 0.7%, p<0.035, and 4.2% vs. 0.7%, p=0.013, respectively). However, no significant difference was observed in the incidence of late stent thrombosis between both groups. No-reflow was developed more frequently in patients with TP compared with those without TP (25.4% vs. 9.8%, p=0.001). Creatinine kinase-MB and cardiac specific troponin-I were elevated more frequently in patients with TP compared with those without TP (+9.0 ± 25.2 U/l vs. +4.2 ± 10.6 U/l, p=0.001 and +10.0 ± 43.5 ng/ml vs. +1.2 ± 35.6 ng/ml, p=0.005, respectively). There were no significant differences in the incidences of cardiac death, MI, and target vessel revascularization at 1-year. Multivariate analysis showed that TP was the independent predictor of composite of acute and subacute stent thrombosis (OR=4.211; 95% CI 1.198-14.805, p=0.025) and composite of acute stent thrombosis and no-reflow (OR=2.551; 95% CI 1.315-4.952, p=0.006).

Conclusion: TP was associated with short-term complications (acute and subacute thrombosis and no-reflow phenomenon), however it was not affect long-term clinical outcomes after stent implantation in patients with AMI.

TCT-106
Fate of Side Branches at 6, 12 and 24 months after implantation of Bioresorbable Scaffolds: Assessment with 3-dimensional optical coherence tomography

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Background: Fully bioresorbable everolimus-eluting vascular scaffolds (ABSORB, Abbott Vascular, Santa Clara, USA) are a novel approach to treat coronary stenosis. However the outcome of jailed side branch with ABSORB has not been investigated yet. The purpose of this study is to assess the fate of struts covering the ostium of side-branches at 6, 12 and 24 months after implantation of the BVS with three-dimensional (3-D) optical coherence tomography (OCT) reconstruction.

Methods: The ABSORB Cohort B trial is a single-arm trial to assess the safety and performance of the BVS. The first 45 patients (Group 1) underwent invasive imaging at 6 months and at 2 years, while the remained 56 patients (Group 2) underwent imaging follow-up at 1 and will repeat it at 3 years. FD-OCT imaging (CXT system) are obtained at a pullback speed of 20 mm/s.

Results: Paired 3D images at baseline and 6 months were available in 16 side branches, while paired analysis at baseline and 12-month follow-up were available in 17 side branches. At 6 months, the average ostium area free from jailing struts did not change from baselines (BL: 1.73 ± 1.35 mm², FU: 1.64 ± 1.21 mm², p=0.7), and the number of compartments was similar between baseline and 6 months following implantation (BL: 2.07±1.1, 6M: 1.93±1.0, p=0.16). At 12 months, 3D OCT showed that membraneous tissue covers some struts, which was translated into a significant decrease in the number of compartments from 2.1 ± 0.8 at baseline to 1.4 ± 0.85 at 12 months (p=0.001). This was accompanied by a decrease of the strut-free ostial area (BL: 1.89 ± 1.35 vs. 12M: 0.76 ± 1.98 mm²) without clinical implication.

Conclusion: The 3-D analysis showed that the ostial area free of struts remained unchanged at 6 months compared to baseline, while it was reduced at 12 months due to growing tissue covering the struts. The results of 2-year imaging will be presented at the time of meeting.

TCT-107
Prevalence, Distribution, Predictors, and Outcomes of Patients with Calcified Nodules in Native Coronary Arteries: A Three-Vessel Intravascular Ultrasound Analysis from PROSPECT

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Background: Pathologic studies suggest that coronary calcified nodules account for 2-7% of thrombotic events. The frequency, distribution, predictors, and outcomes of calcified nodules detected in vivo have never been described.

Methods: Following successful stenting in 697 patients with acute coronary syndromes (ACS), three-vehicle grayscale and virtual histology (VH) intravascular ultrasound (IVUS) was performed. Based on histologic validation, an independent core lab identified calcified nodule as irregular and convex plaque shape. Patients were followed for three years.

Results: Overall, 314 calcified nodules were detected in 250 of 1573 analyzable arteries (185 of 623 patients). Thus, the prevalence of calcified nodules was 17% per artery and 30% per patient. The location of the calcified nodules were <40mm of the ostium of the coronary artery in 85% of LAD and 86% of LCX while calcified nodules within the RCA were evenly and more distally distributed. Patients with calcified nodules were significantly older, had more plaque volume (IVUS), and more thick-capped fibroatheroma (VH-IVUS), but fewer non-culprit lesion major adverse events follow-up.

Table. Clinical Characteristics, imaging parameters and clinical event rates comparing patients with vs without calcified nodules.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Calcified nodules (n=314)</th>
<th>No calcified nodules (n=1263)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>61 (53-69)</td>
<td>63 (53-71)</td>
<td>0.068</td>
</tr>
<tr>
<td># of diseased lesions</td>
<td>3.01±1.5 (1.0-6.0)</td>
<td>3.01±1.5 (1.0-6.0)</td>
<td>0.9</td>
</tr>
<tr>
<td># of TP lesions</td>
<td>2.0±1.5 (1.0-6.0)</td>
<td>2.0±1.5 (1.0-6.0)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td># of TCFA lesions</td>
<td>2.0±1.5 (1.0-6.0)</td>
<td>2.0±1.5 (1.0-6.0)</td>
<td>0.9</td>
</tr>
<tr>
<td>Plaque volume (%)</td>
<td>26.5±86.53 (50.0-100.0)</td>
<td>43.4±94.53 (50.0-100.0)</td>
<td>0.002</td>
</tr>
<tr>
<td>% NC volume (%)</td>
<td>5.1±6.4 (0.0-31.0)</td>
<td>4.4±6.4 (0.0-31.0)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>% necrotic core (%)</td>
<td>3.0±6.5 (0.0-31.0)</td>
<td>3.0±6.5 (0.0-31.0)</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Conclusion: Calcified nodules in untreated non-culprit coronary segments in patients with ACS are more prevalent than previously recognized; their distribution mirrors the origin of most thrombotic events. However, they are unlikely to cause events during 3-year follow-up.

TCT-108
Intraoperative Shuntography for Immediate Control and Improvement of Results of Coronary Bypass Surgery

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Background: To analyze our experience with intraoperative shuntography for immediate evaluation of coronary shunts condition in patients after CABG.

Methods: The study comprised 1084 patients who received 2707 coronary shunts during the period from February 2009 through April 2011. The patients’ age varied...