122.4 ± 178.3 mg/dL, p = 0.006), pre-PCI minimal lumen diameter was smaller (0.19 ± 0.30 mm vs. 0.32 ± 0.36 mm, p = 0.041), pre-PCI diameter stenosis was higher (93.9 ± 9.5% vs. 89.6 ± 11.5%, p = 0.037), pre PCI TIMI flow was lower (pre-PCI TIMI flow non-3: 77.8% vs. 59.3%, p = 0.038), and post-PCI diameter stenosis was higher (14.6 ± 6.8% vs. 11.6 ± 5.0%, p = 0.004). Multivariate analysis revealed peak CR-MB and EF were independent predictor of TP. During three years of follow up, major adverse cardiac events (MACE; target vessel revascularization, myocardial infarction, death) were not different in TP + and TP – groups (11.1% vs. 16.7%, p = 0.404).

Conclusions: Despite of minor angiographic difference, TP was not associated with three-year MACCE in patients with primary coronary stent implantation due to STEMI.

**TCT-560**

**Randomized Serial Optical Coherence Tomographic Evaluation of The Lesions Following Biolimus-A9-eluting versus Sirolimus-eluting stents; SEVEN OCT trial**

Byeong-Keuk Kim1, Donghoon Choi2, Myeong-Ki Hong3, Yang soo Jang4, Hironori Kitabata1, Joshua P. Loh1, Lakshmana Pendyala1, Salem Badr1, Alfazir Omar1, Israel Barbash1, Sa’ar Minha1, Marco A. Magalhaes1, Hideaki Ota1, Fang Chen1, Rebecca Torguson1, Lowell F. Satler1, William O. Suddath1

Background: No randomized studies have been conducted to investigate serial changes of optical coherence tomography (OCT) findings following biolimus-A9-eluting stents (BES) vs. sirolimus-eluting stents (SES) implantation.

Methods: A total of 60 patients fulfilling study criteria were randomly assigned into BES (n=30) and SES (n=30) implantation. Of these, serial OCT evaluation at post-PCI, 3, and 12 months was performed in 46 patients (BES (n=22) and SES (n=24)) and OCT findings were compared according to the types of stents and followed time intervals. The primary endpoint was the percentage of uncovered struts (ratio of uncovered struts to total struts in all cross-sections with 0.2-mm interval) at 3 and 12 months and the changes (Δ) of percentages between 3-12 months.

Results: Although the percentages of uncovered struts at 3 months were not significantly different between two stents, BES compared to SES showed a significantly higher percentage of uncovered struts on 12-month OCT without significant difference of neointimal thickness (SnA). Through serial OCT evaluation, both stents significantly increased strut coverage from 3 to 12 months. However, BES showed a greater Δ percentage of uncovered struts between 3-12 months than SES (See Figure B).

Conclusions: In this randomized serial OCT study, both DESs still showed the incomplete strut coverage at 3 months but BES compared to SES showed a significantly lower prevalence of uncovered struts at 12 months by superior coverage from 3 to 12 months.

**IVUS findings**

<table>
<thead>
<tr>
<th>Cypher (n=70)</th>
<th>TAXUS (n=34)</th>
<th>Xience/ Promus (n=50)</th>
<th>Promus Element (n=64)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute value of difference in length ([IVUS-measured length-labeled length] (%)</td>
<td>1.0 ± 0.7</td>
<td>1.0 ± 0.7</td>
<td>1.0 ± 0.7</td>
<td>0.9 ± 0.6</td>
</tr>
<tr>
<td>Absolute value of relative change in length ([IVUS-measured length-labeled length]/ labeled length) (mm)</td>
<td>4.9 ± 3.8</td>
<td>6.2 ± 4.5</td>
<td>5.7 ± 3.6</td>
<td>6.0 ± 4.7</td>
</tr>
<tr>
<td>Absolute relative difference of &gt;5% (%)</td>
<td>34.3</td>
<td>58.8</td>
<td>54.0</td>
<td>51.6</td>
</tr>
<tr>
<td>Absolute relative difference of &gt;15% (significant difference) (%)</td>
<td>2.9</td>
<td>5.9</td>
<td>4.0</td>
<td>4.7</td>
</tr>
</tbody>
</table>

**TCT-561**

**Comparison Of Stent Axial Intimacy In First- Versus Second-Generation Drug-Eluting Stents: Insights From An Intravascular Ultrasound Analysis**

Hironori Kitabata1, Joshua P. Loh1, Lakshmana Pendyala1, Salem Badr1, Aljazir Omar1, Israel Barbash1, Sa’ar Minha1, Marco A. Magalhaes1, Hideaki Ota1, Fang Chen1, Rebecca Torguson1, Lowell F. Satler1, William O. Suddath1, Kenneth Kent1, Augusto Pichard1, Ron Waksmann1

Background: Longitudinal stent deformation (LSD) is a recently reported complication of coronary intervention. However, to date, the axial integrity of stents has not been systematically examined. This study aimed to assess the rate of LSD after implantation utilizing intravascular ultrasound (IVUS).

Methods: A total of 218 drug-eluting stents (DES) of 197 patients with coronary artery disease who underwent IVUS after implantation for de novo lesions were included: 32.1% sirolimus-eluting stents (SES); 15.6% paclitaxel-eluting stents (PES); 22.9% cobalt-chromium everolimus-eluting stents (CC-EES); and 29.4% platinum-chromium everolimus-eluting stents (PC-EES, Element platform). Stent length was determined using automatic pullback of an IVUS catheter. The absolute value of the difference in length [IVUS-measured stent length – labeled stent length] (mm), and the absolute value of the relative difference in length ([IVUS-measured stent length – labeled stent length]) divided by labeled length (%) were analyzed.

Results: There was no significant difference with regards to the absolute and relative differences in stent length among groups. The absolute relative difference of >15% was the lowest in the SES group compared to the other groups. Significant (>15%) absolute value of the relative difference in stent length was low and similar among groups. (Table)

Conclusions: This IVUS analysis proved that there are no significant differences in axial stent integrity between first- and second-generation DES and among second-generation DES. The anecdotal reports of longitudinal deformation are unsubstantiated in contemporary clinical practice.

**TCT-562**

**Impact of Target Lesion Coronary Calcification on Stent Expansion: An Optical Coherence Tomography Study**

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Background: Stent underexpansion is still a concern as a cause of drug-eluting stent (DES) failure. Although the amount of coronary calcification is considered as a contributing factor for stent under expansion, a previous intravascular ultrasound (IVUS) study failed to demonstrate relation between stent expansion and coronary calcification. Optical coherence tomography (OCT) offers better quantitative assessment of coronary calcium than IVUS and therefore may have potential to predict stent expansion. Thus, the purpose of this study was to investigate whether stent expansion could be predicted by coronary calcification assessed by OCT.

Methods: A total of 51 de novo native coronary artery lesions from 44 patients treated by single 2nd generation DES were enrolled. Prior to stent deployment, arc of calcium detected by single 2nd generation DES were enrolled. Prior to stent deployment, arc of calcium assessed by OCT.

Conclusions: This IVUS analysis proved that there are no significant differences in axial stent integrity between first- and second-generation DES and among second-generation DES. The anecdotal reports of longitudinal deformation are unsubstantiated in contemporary clinical practice.