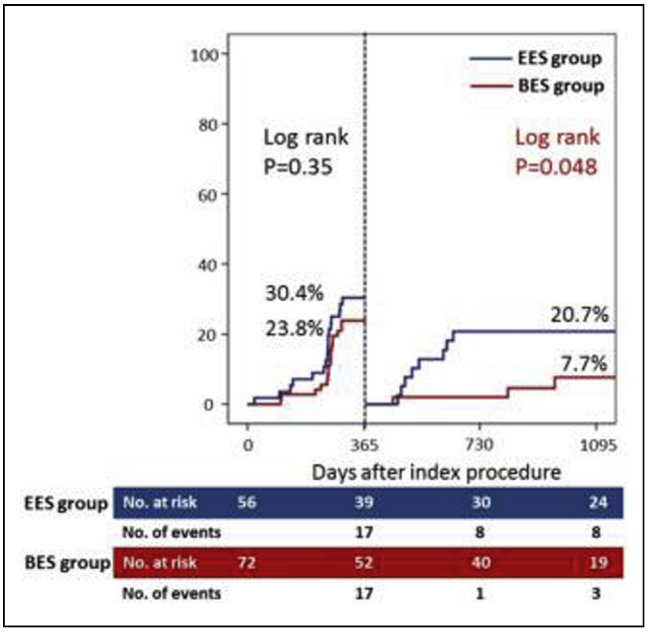
target lesion revascularization (TLR), and stent thrombosis. This study aimed to assess the long-term clinical and angiographic impact of SF on Xience everolimus-eluting stent (EES) and Nobori biolimus-eluting stent (BES) implantation.

**METHODS** From 2010 to 2013, 3246 lesions (1783 patients) were treated with EES and 1618 lesions (986 patients) with BES, in which follow-up angiography was performed within one year after index procedure. SF was defined as the separation of stent segments or stent struts at follow-up angiography. The mid-term angiography was performed at 8 months and the late-term at 20 months. ISR was defined as more than 50% restenosis. Late catch-up phenomenon was defined as ISR, excluding that within one year after index procedure.

**RESULTS** SF was observed in 1.7% (56/3246) of the lesions treated with EES and 4.4% (72/1618) with BES. The median follow-up duration of the study population was 1028 days (the first and third quarters, 838 and 1275 days). The mid-term restenosis rate showed no significant difference between the EES and BES groups (40.7% versus 30.6%, p=0.26). The late catch-up phenomenon rate was significantly lower in the BES group (18.2% versus 2.4%, p=0.04). Very late stent thrombosis was none in the EES group, on the other hand, occurred in one patient in the BES group. The three-year cumulative rates of any TLR did not significantly differ between the 2 groups (44.8% versus 29.7%, p=0.07). A landmark analysis of the cumulative rates of any TLR within and beyond one year is shown in the figure.

**CONCLUSIONS** The long-term clinical impact of SF could be different between EES and BES implantation.




**CATEGORIES CORONARY:** Stents: Drug-Eluting

**KEYWORDS** Drug-eluting stent, second generation, Long-term follow up, Stent fracture

## TCT-560

### In-stent restenosis assessed by optical coherence tomography (OCT) indicates smooth coronary arterial healing process in second generation drug eluting stents (DES)

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**BACKGROUND** In second generation DES era, in-stent restenosis (ISR) is not commonly seen but is still encountered occasionally. The pathophysiology and mechanism of ISR after second generation DES implantation have not been fully clarified.

**METHODS** Patients who underwent follow-up coronary angiography (CAG) after first (Cypher and Taxus) and second generation DES (Nobori, Promus Element, Resolute Integrity, and Xience) implantation were examined. The first scheduled CAG was performed at six to nine months after percutaneous coronary intervention (PCI) and the second at 18 to 24 months after PCI. ISR was defined as lesions more than 75% diameter stenosis at follow-up CAG. Optical coherence tomography (OCT) was performed at the time of revascularization to ISR. Then OCT imaging of second generation DES ISR of early (<1 year) and late (≥ 1 year) phase were compared with first generation DES ISR, retrospectively.

**RESULTS** From April 2008 to January 2010, first generation DES were implanted in 805 lesions. From January 2011 to December 2014, second generation DES were implanted in 1269 lesions in our hospital. ISR rate were significantly lower in second generation DES ISR (9.6% (N=77) vs 4.0% (N=51), p<0.05). In qualitative OCT assessment of second generation DES ISR in total, each ratio of homogeneous, layered, heterogeneous, lipid rich attenuation, calcified nodule tissue morphologies were 54.0% and 16.2%, 18.9%, 5.4%, and 5.4% respectively. Compared with first generation DES ISR, both in early and late ISR cases, homogeneous morphology was significantly higher in second generation DES ISR (61.1% vs 36.0%, and 47.3% vs 8.0%, respectively, p<0.05).

**CONCLUSIONS** Homogeneous tissue morphology assessed by OCT was more frequently found in second generation DES ISR than first generation DES ISR, especially in early phase (<1 year). This finding suggests that neointimal hyperplasia is main mechanism in second generation DES early ISR and arterial healing process is smooth like bare metal stents implantation.

**CATEGORIES CORONARY:** Stents: Drug-Eluting

## TCT-561

### Final Five-Year Outcomes Following Implantation of the Promus Element® Platinum Chromium Everolimus-Eluting Stent in De Novo Coronary Artery Lesions in Small Vessels (SV) and Long Lesions (LL): Results of the PLATINUM Small Vessel and Long Lesion Trials

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**BACKGROUND** The thin-strut, everolimus-eluting, platinum chromium PROMUS Element stent (Boston Scientific, Marlborough MA) has shown favorable early outcomes up to 4 years post-implantation for the treatment of de novo long lesions or lesions in small-caliber vessels, but long-term follow-up has not been previously reported.

**METHODS** PLATINUM SV and LL are prospective, single-arm, multinational studies that enrolled patients with angina pectoris or documented silent ischemia and a single de novo native coronary artery target lesion. PLATINUM SV enrolled 94 subjects with baseline vessel diameter ≥2.25 mm to <2.50 mm and lesion length ≤28 mm, and PLATINUM LL enrolled 102 patients with a target lesion >24 to ≤34 mm long with vessel diameter ≥2.50 to ≤4.25 mm. Follow-up was performed for 5 years.

**RESULTS** Patients were predominantly male (SV: 72.3%, LL: 62.7%) and approximately one third had diabetes (SV: 42.6%, LL: 30.0%). The mean baseline reference vessel diameter (RVD) in SV was 2.0 ± 0.3 mm and lesion length was 14.2 ± 7.0 mm. For the LL study, RVD was 2.6 ± 0.4 and mean lesion length was 24.4 ± 8.2 mm. The primary endpoint, 1-year target lesion failure (TLF,; cardiac death, myocardial infarction (MI) related to the target vessel, ischemia-driven target lesion revascularization [TLR]), was 2.4% for SV and 3.2% for LL, both significantly less than prespecified performance goals (P<0.001 for each). At 5 years, TLF, TLR, cardiac death, MI and ARC stent thrombosis (ST) had occurred in 6 (7.0%), 3 (3.6%), 5 (5.9%), 2 (2.4%), and 0 (0%) patients respectively in the SV trial and TLF, TLR, cardiac death, MI and ARC stent thrombosis (ST) had occurred in 13 (13.6%), 7 (7.5%), 5 (5.9%), 1 (1.3%), and 0 (0%) patients respectively in the LL trial.