TCT-189
Syntax Score-Based Assessment For Identifying Priority Of Second Generation Drug Eluting Stent Among All Comer Patients Who Underwent Percutaneous Coronary Intervention
Masanori Shiba1, Tadashi Araki2, Yoshinori Nagashima3, Kenji Yamauchi4, Masahide Tokue5, Kaoru Sagi6, Masato Nakamura7
1Toku University Ohashi medical center, Tokyo, Japan

Background: Although superiority of second generation drug eluting stent (DES) than first generation DES is suggested, this efficiency has not been demonstrated by recent randomized trials. Syntax score-based assessment for outcomes of PCI may help to identify priority of second generation DES.

Methods: We investigated 1264 of all comer patients who underwent percutaneous coronary intervention (PCI) with restricted use of DES either first generation (Cypher751 and Taxus378) or second generation (Xience or Promus190 and Nobori165), and compared between them. We employed syntax score for evaluating severity of coronary artery disease, and patients were classified into three groups by tertile of its score (low; 1-11, intermediate; 12-24, high; >25). Primary endpoint of this analysis was major adverse cardiac event (MACE) comprised from all cause death, non-fatal myocardial infarction, and any target lesion revascularization.

Results: Of all, based on survival analysis, occurrence of MACE was lower in patients with second generation DES than first generation DES (median: 71.5days, first: 16.3% vs. second: 11.8%, P=0.03). According to syntax score-based analysis (low:7.2±3, intermediate:7.7±4, high:37.6±11) for occurrence of MACE, superiority of second generation DES was seen among patients with high syntax score (first: 24.1% vs. second: 7.5%, P<0.001) in contrast to similar results of low (9.8% vs.6.8%, P=0.02) and intermediate (16.2% vs. 15.3%, P=0.86) syntax score. According to multivariate analysis, statin therapy (hazard ratio:HR=0.56, 95% confidence interval:95%CI 0.39-0.79, P=0.001), CKD(eGFR<60ml/min, HR;1.79,95%CI:1.28-2.50, P<0.001), and syntax score (HR:1.02, 95%CI; 1.01-1.03, P=0.001) was an independent predictor of occurrence of MACE.

Conclusions: In this all comer study, superiority of second generation DES than first generation DES was seen in patients with high syntax score. Newer technology of DES may contribute to improve the outcomes of such high risk patient. Assessment of lesion complexity was important to evaluate outcomes of PCI using DES. And we should pay attention to statin therapy and CKD to improve outcomes of all patients.

TCT-190
Bioimus Eluting Stent For de novo CoarxY artery disease in patEnts with Diabetes mellitus8: the BESTRIEND multisite registry.
Emanuele Meliga1, Giacomo G. Bocuzzi2, Mariia Rosa Conte2, Mauro De Benedictis3, Andrea Gagnou4, Azem Latt1, Pramitano Lombardi5, Alessandro Lapi4, Innocenza Scrocco6, Alessandro Sticchi8, Ferdinando Varbella8
1Mauriziano Umberto I Hospital, Turin, Italy, 2San Giovanni Bosco Hospital, Turin, Italy, 3Mauriziano Umberto I Hospital, turin, italy, 4Mauriziano Hospital, Turin, Italy, 5Infermi Hospital, Rivoli, Italy, 6San Raffaele Scientific Institute, Milan, Italy, 7Santa Croce Hospital, Moncalieri, Italy, 8AOU Maggiore della Carità, Novara, Italy, 9Ospedale Mauriziano, TORINO, Italy, 10San Raffaele Scientific Institute, Milano, Milano

Background: the reduction of arterial wall inflammation and delayed healing could play an important role in decreasing adverse events in complex patients such as diabetes. Paclitaxel (paclitaxel/Bioresorbable polymers (bp) may have an advantage (advantageous over erodable polymers because any tendency to inflammation is eliminated after the polymer degrades. Aim of the present study was to assess the efficacy of bp-Bioimus-Eluting Stent (bp-BES) in a large series of consecutive diabetic patients.

Methods: from 2008 to 2012, consecutive diabetic patients who underwent PCI with bp-BES implantation for de novo coronary artery lesions in six European tertiary care centres were retrospectively selected and analyzed. Primary endpoints were the incidence of target lesion revascularization (TLR) and target vessel failure (TVF, defined as cardiac death, MI and target vessel revascularization – TVR) at long term follow-up.

Results: a total of 650 patients were included in the analysis. Mean age was 66.4±9.7 years and 73.4% of patients were males. IMDD was present in 32.8% of patients and 92.9% had at least one additional cardiovascular risk factor. Clinical presentation was stable angina in 48.5% of cases, followed by ACS(STEMI 36.6%), STEMI (8.6%) and silent ischemia (6.3%). Multivessel disease was present in 46.1% of patients and number of vessel and lesion treated per patient were 1.34±0.52 and 1.58±0.60 respectively. Total stent length per patient was 38.4±18.6mm and stent per patient ratio was 1.81±0.71. Median time to follow-up was 391 days (IQ 290-661). During the hospital stay, no patient died and the incidence of TVF was 0.7%. At follow-up, cumulative incidence of cardiac death was 1.3%, MI rate was 1.1%, TLR and TVR rates were 7.9% and 11.9% respectively. Definite/probable ST occurred in 1.4% of patients. Time to event analysis showed a TLR and TVF-free survival at median FU and at 661 days of 94.79% and 91.28% respectively. At multivariate Cox regression, IMDD was found to be independent predictor of TVF (HR:2.18; 95%CI: 1.32–4.89; p=0.02) at long-term FU.

Conclusions: use of bp-BES in a large unselected population of diabetic patients was related with excellent results both in terms of TLR and TVF at short and long term FU.

TCT-191
Long-term Outcomes Of The New Generation Drug-Eluting Stents In Patients With Diabetes Mellitus And Single Vessel Disease
Chrysoula Patta1, Konstantinos Tountouzas2, Eleftherios Tsiamis3, Anastasios Spanos1, Tolis Hlias1, Konstantinos P. Tsoupa1, Dimitrios Toussoulis4, Christodoulos Stefanidis1
1 Hippokration Hospital, Athens, Greece, 2 Hippokration Hospital, Athens, Greece, 3 Hippokration Hospital, Athens, Greece, 4 Athens Medical Center, Athens, Greece

Background: Diabetes mellitus (DM) is an independent predictor of adverse clinical events after drug-eluting stent implantation. New generation drug-eluting stents (DES) have demonstrated their mid-term effectiveness and safety in patients with DM. However, limited data exists for long-term safety and efficacy. Therefore, we investigated the long-term clinical outcomes of new generation DES implantations in patients with DM and single vessel disease.

Methods: We prospectively enrolled 600 consecutive patients. Of these, 418 patients were non-diabetic, whereas 182 had DM. All patients received zotarolimus- or everolimus-eluting stent. The major adverse cardiac events (MACE) including death, non-fatal myocardial infarction (MI) and target lesion revascularization (TLR) were defined as primary end points. Stent thrombosis was also evaluated according to the Academic Research Consortium Definition.

Results: The overall MACE rates were higher in patients with DM, and the difference was statistically significant (5.26% in non-DM patients vs 10.98% in DM patients; p<0.01) during the 3 years follow-up period. Also the overall death (cardiac/non-cardiac) was statistically significantly higher in DM patients as compared with non-DM patients (3.29% vs 0.47%, p=0.01 respectively). Rates of TLR (4.06% non-DM vs 4.94% DM patients, p=0.66) and non-fatal MI (0.71% non-DM vs 2.74% DM patients, p=0.05) were not significantly different between the 2 groups. Notably patients with DM had a statistically significantly increased definite stent thrombosis rate (0.79% non-DM vs 3.29% DM, p=0.02).

Conclusions: Our study demonstrated that the long term safety of the new generation DES is still a concern in patients with DM, as the overall death and the definite stent thrombosis rate were increased.

TCT-192
One Year Clinical And Angiographic Outcomes After Everolimus- And Paclitaxel-eluting Stent Implantation For Small Coronary Vessels In Diabetic Patients: sub-analysis From PLUM and SACRA registries
Yuki Okawa7, Tadanoari Aizawa1, Ryo Gotoh1, Ren Kawaguchi1, Yuya Nakagawa2, Kenya Nasa3, Atsumori Okamura4, Shinichi Shirai5, Takahide Suzuki6, Yukihito Takeda1, Masaaki Tanabe1, Yasuji Ujiie4, 1The Cardiovascular Institute, Tokyo, Japan, 2Shimizu General Hospital, Sasebo, 3Hiroyo Kita, 4Kansekai Hospital, Saitama, 5Gunma Prefectural Cardiovascular Center, Maebashi, Gunma, 6Tokai-kei Memorial Hospital, Sapporo, Hokkaido, 7Toyohashi Heart Center, Toyohashi, Aichi, 8Sakurabashi-Watanabe Hospital, Osaka, Japan, 9Kokura Memorial Hospital, Kitakyushu, Fukuoka, 10JA Hokkaido Engaru Kosei General Hospital, Monselzuk, Japan, 11Toyohashi Heart Center, Toyohashi, Japan, 12Rinku General Medical Center, Izumi-Sano, Japan, 13Dai-ni Okamoto General Hospital, Kyoto, Japan, 14Hoshi General Hospital, Fukashima, Japan

Background: There are limited clinical follow-up data after single drug-eluting stent implantation for small coronary artery diseases in diabetic patients. The aim of this study is to evaluate the one-year clinical and angiographic outcomes following small coronary stenting between everolimus- (EES) and paclitaxel-eluting stent (PES) in diabetic patients.

Methods: PLUM (PROMUS/Xience V Everolimus-ELuting Coronary Stent for sMall coronary artery disease, 264 patients with 279 lesions) and SACRA (SmAll CoroNaRY Artery treated by TAXUS’ Liberté: 245 patients with 258 lesions) registries are prospective, multicenter registries to assess the efficacy of single EES and PES in patients with small coronary artery diseases. Inclusion criteria were 1) Lesions<75% diameter stenosis in vessels <2.5mm in diameter, 2) lesion length <28mm. From these registries, 247 lesions in 235 diabetic patients were selected to evaluate one year clinical and angiographic results.

Results: Major adverse cardiac events between the two groups were similar, however, late loss, one year target lesion revascularization and binary restenosis rates were significantly lower in EES group (Table).

Conclusions:
**TCT-194**

### 5-Year Outcome Of Zotarolimus-Eluting Versus Sirolimus-Eluting Coronary Stent Implantation In Patients With And Without Diabetes Mellitus

<table>
<thead>
<tr>
<th></th>
<th>EES</th>
<th>PES</th>
<th>Hazard Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute gain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSM</td>
<td>1.36 (0.37)</td>
<td>1.43 (0.26)</td>
<td>0.21</td>
<td>1.36 (0.37)</td>
</tr>
<tr>
<td>Non-DM</td>
<td>1.37 (0.32)</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Late lobe</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSM</td>
<td>0.22 (0.32)</td>
<td>0.54 (0.49)</td>
<td>-0.0001</td>
<td>0.25 (0.27)</td>
</tr>
<tr>
<td>Non-DM</td>
<td>0.46 (0.44)</td>
<td>-0.0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Binary restenosis rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td></td>
<td></td>
<td>1.01 (0.71)</td>
<td>0 (0.8)</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td></td>
<td></td>
<td>0 (0.7)</td>
<td>1 (0.8)</td>
</tr>
<tr>
<td>TLR</td>
<td></td>
<td></td>
<td>0.007</td>
<td>10 (7.6)</td>
</tr>
<tr>
<td>TLR</td>
<td></td>
<td></td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>Any MACE</td>
<td></td>
<td></td>
<td>0.05</td>
<td>13 (10.0)</td>
</tr>
<tr>
<td>Any MACE</td>
<td></td>
<td></td>
<td>0.58</td>
<td></td>
</tr>
</tbody>
</table>

### Conclusions

This study represents the largest reported dataset of patients treated with RA in the DES era with long-term follow-up. The use of DES following RA appears to be associated with reduced long-term mortality.

---

**TCT-195**

### Impact of Total Stent Length on Clinical Outcomes After Percutaneous Coronary Intervention With Biolimus-Eluting Stent Versus Everolimus-Eluting Stent

**Background:** Rotational atherectomy (RA) facilitates delivery of stents in calcific lesions. Calcified coronary lesions are an established risk factor for long-term failure after bare metal stenting (BMS) and drug-eluting stent (DES) implantation. Whilst DES use following RA may result in high procedural success and acceptable restenosis rates, there is limited data on their long-term efficacy and prognosis based on TSL per patient and lesion in patients with diabetes at 5-year follow-up.

**Methods:** A total of 2284 patients with 3097 lesions undergoing DES (1169 patients with 1751 lesions) and EES (1015 patients with 1346 lesions) implantation between February 2010 and July 2012 were analyzed. Patients and Lesions were divided into quartile groups: TSL per patient (PA: 8 to 18 mm [n = 814], PB: 19 to 24 mm [n = 384], PC: 25 to 42 mm [n = 557], PD: 43 to 134 mm [n = 529]), and TSL per lesion (LA: 8 to 18 mm [n = 1147], LB: 19 to 24 mm [n = 547], LC: 25 to 38 mm [n = 638], LD: 39 to 134 mm [n = 765]). In the BES and EES groups, we assessed the cumulative 1-year incidence of clinically driven target lesion revascularization (TLR) and definite stent thrombosis based on TSL per patient and lesion groupings, and cardiac death and myocardial infarction in the TSL per patient groups.

**Results:** In per lesion data, longer TSL increased TLR rates (p = 0.0001) but did not increase rate of stent thrombosis (p = 0.11). In the BES group, MACE, contrast, longer TSL did not increased TLR rate (p = 0.22) and rate of stent thrombosis (p = 0.45) in the EES group. In group A, the rate of TLR was significantly lower in the BES group than in the EES group (3.1% vs.4.6%, p = 0.005). In per-patient data, longer TSL increased TLR rates (p = 0.008) but did not increase rate of stent thrombosis (p = 0.74) in the EES group, whereas did not increased TLR rate (p = 0.24) and rate of stent thrombosis (p = 0.38) in the EES group. Incidence of cardiac death and myocardial infarction also did not increasing with increasing TSL in the two groups.

**Conclusions:** TSL per patient and lesion has significantly impacts on TLR rates in the BES group, whereas do not in the EES group. TSL per patients and lesion do not increase the rate of stent thrombosis within 1-year in the EES and BES groups.