revascularization and cerebral vascular accidents) 1 year after DES implantation in the Pio-treated group was significantly decreased (6.6%) compared with that with other therapies in the group without Pio (12.0%, P < 0.01). The rate of CV events 3 years after DES implantation in the Pio-treated group was significantly decreased (10.6%) compared with that with other therapies in the group without Pio (19.1%, P < 0.01).

Conclusions: Pioglitazone significantly decreases CV events of Japanese patients with DM after DES implantation according to 1-year and 3-year follow-up results.

TCT-244
Real World 1-year Clinical Outcomes of Bioreresorbable Vascular Scaffold Implantated in Diabetic Patients
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Background: Aim of the present study is to investigate 1-year clinical outcomes after implantation of BVS vs. EES in all-comer diabetic patients, including those with complex lesion characteristics.

Methods: Consecutive diabetic patients treated with BVS between May 2007 and April 2014 and those treated with EES between December 2006 and August 2012 in two Italian centers were included in this retrospective study. One-year outcomes of major adverse cardiac event (MACE: composite of all-cause mortality, any CV event, and any target lesion revascularization [TLR]) were compared between the two groups.

Results: Forty-two patients (65 lesions) treated with BVS, and 264 (356 lesions) treated with EES were enrolled. Mean age (BVS: 62.8±1.9 vs. EES: 65.7±1.6, p=0.13) and male gender (92.5% vs. 82.2%, p=0.11) were similar in both groups. The use of insulin (32.5% vs. 30.7%), prevalence of chronic kidney disease (22.5% vs. 21.5%, p=1.00) and ejection fraction (55.0 [IQR: 50.0-60.0] vs. 55.0 [50.0-60.0], p=0.48) were also similar. With regards to lesion characteristics, total stent length per patient was higher in the BVS compared to the EES group (28mm (26-55) vs 23mm (18-36), p<0.001). At 1-year follow-up, MACE occurred in 17.9% patients in the BVS group and 14.2% in the EES group (p=0.36), whereas TLR occurred in 8.9% of patients in the BVS and 7.2% in the EES group (p=0.76). After 1.2 years of follow-up (40 BVS patients:80 EES patients), 1-year MACE was observed in 17.9% of BVS patients vs 8.9% of EES (p=0.077). TLR was 8.9% in the BVS group and 3.9% in the EES group (p=0.19). The major contribution to MACE were periprocedural myocardial infarction (PCI: CK-MI<5) (7.5% with BVS and 0% with EES). A more aggressive predilatation and postdilatation and the thicker stent struts of BVS may explain the higher incidence of pMI.

Conclusions: BVS implantation in all comer diabetics, including those with complex coronary lesions is feasible with acceptable 1-year outcomes when compared to EES. The higher incidence of pMI warrants further investigation.

TCT-245
Diabetic patients treated with Bioreresorbable Vascular Scaffolds show good clinical outcomes at two-year follow-up: A pooled analysis from the ABSORB and SPIRIT trials
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Background: Diabetes is associated with diffuse coronary artery disease and worse clinical outcome after stenting with metallic stents. Everolimus-eluting bioreresorbable vascular scaffolds (BVS, Abbott Vascular, Santa Clara, California, USA) represent a new approach. This study aimed to evaluate feasibility and mid-term clinical outcome after implantation of BVS for diabetic patients.

Methods: All patients with diabetes who had been treated with BVS in the vicinity of our all-comers registry were included, irrespective of their clinical presentation. Target parameters were target vessel failure (TVF), major adverse cardiac events (MACE) including target lesion revascularization (TLR), cardiac death, myocardial infarction and emergency coronary bypass graft surgery. Follow-up was performed by telephone call and/or office visit.

Results: A total of 100 patients were included, of whom 15% had a STEMI, 20% a NSTEMI, 17% presented unstable angina and 52% stable angina. Median age was 67 (60-73) years, 29% were female, 97% suffered from hypertension. Of all patients, 36% patients had an insulin-dependent diabetes, all other patients were treated with oral antidiabetics or dietary. Median procedure time was 56.5 min (41 – 70), mean contrast volume was 178.3 mL (± 92.3). A total of 105 bioreresorbable vascular scaffolds were implanted with an mean number of 1.4 ± 0.8 per patient. There was no implantation possible in two cases. Median follow-up duration was 175 (59 – 316) days. Three scaffold thromboses occurred, of which two were most probably due to discontinuation of dual antiplatelet therapy. One in-scaffold restenosis was noted. In summary the total rates of TVF, TLR and MACE were 5.1, 4.1 and 8.0%, respectively.

Conclusions: Since the experience with bioreresorbable vascular scaffolds in specific subgroups is limited, this study confirms safety of bioreresorbable vascular scaffold implantation in diabetes. Furthermore our results demonstrate satisfying mid-term clinical outcome. DAPT regimens should be extraordinary crucial to prevent scaffold thrombosis. Nevertheless, long-term data is required for final evaluation.

TCT-247
Percutaneous Coronary Intervention of Small Vessels in the RESOLUTE Global Clinical Program: The Impact of Diabetes Mellitus
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Background: Percutaneous coronary intervention (PCI) of small vessels has been associated with high risk of recurrent events, especially in patients with diabetes mellitus (DM).

Methods: We examined outcomes of patients with small reference diameter (<2.5 mm) vessels who underwent PCI using ResoluteTM zotarolimus-eluting stent (R-ZES) in the pooled RESOLUTE program stratified by diabetic status. Target Lesion Failure (TLF) was composite of death from cardiac causes, target vessel myocardial infarction (TV-MI), and target lesion revascularization (TLR). The incidence of clinical events was calculated using the Kaplan Meier method.

Results: Among 2721 patients with at least one small vessel lesion treated with R-ZES, 233 patients had insulin dependent DM (IDDM), 724 patients had non-insulin dependent diabetes mellitus (non-IDDM), and 1764 patients did not have diabetes (no-DM). Among patients undergoing PCI with small vessels in the pooled RESOLUTE program, NIDDM and non-DM patients had similar 3-year outcomes, whereas IDDM patients had significantly poorer outcome than with IDDM. These outcomes demonstrate the long-term safety and effectiveness of R-ZES in complex NIDDM and non-DM patients. Submitted on behalf of the RESOLUTE Global Clinical Program.
TCT-248

Impact of Diabetes Mellitus on Angiographic Outcomes in Patients with Different Drug-eluting Stents

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Background: There is currently no data to evaluate the differences of drug-eluting stents on the angiographic outcomes of diabetes mellitus (DM) patients. To evaluate the effects of different drug-eluting stents on the outcomes of DM patients, we investigated serial angiographic outcomes after drug-eluting stent placement.

Methods: From 2002 to 2010, 10983 consecutive de-novo coronary lesions were treated using drug-eluting stents (biolimus-eluting stent (BES); n=1367, everolimus-eluting stent (EES); n=2983, paclitaxel-eluting stent (PES); n=1215, sirolimus-eluting stent (SES); n=5418). 41% were DM and 10% were insulin-treated patients. Angiographic follow-up was routinely performed 8 months after a successful procedure (follow-up rate was 82%). Angiographic outcomes were compared among patients with the implanted stent types.

Results: The binary restenosis rates were 6.6% in non-DM patients, 11.0% in non-insulin-requiring DM patients, and 14.0% in insulin-treated DM patients. The SES, PES and BES groups had higher restenosis rates in non-insulin-requiring DM patients compared with non-DM patients (SES: 6.1% vs. 10.4%, p<0.001; PES: 12.0% vs. 21.7%, p<0.001; BES 5.9% vs. 9.1%, p=0.04). Binary restenosis in the EES group were similar between non-DM patients and non-insulin-requiring DM patients (5.5% vs. 5.6%, p=0.92). A multivariable analysis showed that DM was an independent predictor of recurrent restenosis in implantation of SES (odds ratio [OR]: 1.98, 95% confidence interval [CI]: 1.59 to 2.46, p<0.001), PES (OR: 1.74, CI: 1.22 to 2.48, p=0.002), and BES (OR: 1.60, CI: 1.01 to 2.53, p=0.04), except EES (OR: 1.19, CI: 0.85 to 1.67, p=0.30).

Conclusion: Percutaneous coronary intervention in DM patients is associated with worse angiographic outcomes compared with those in non-DM patients. The use of EES could be effective for DM patients.

TCT-249

Differential Impact Of Diabetes Mellitus On Safety And Efficacy Of New Versus First Generation Drug-eluting Stents Among Women: A Patient-level Pooled Analysis Of 26 Randomized Trials

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Background: To evaluate whether the impact on clinical outcomes of newer vs. first generation drug-eluting stents (DES) is influenced by diabetes mellitus (DM).

Methods: We pooled patient-level data of 10,448 women undergoing PCI with DES from 26 randomized trials. Baseline characteristics and long-term clinical outcomes were stratified according to baseline DM status and DES type (new vs. first generation). Associations between stent type and outcomes were examined within each stratum using Cox regression with trial entered as a random effect. The primary endpoint was the composite of all-cause death or myocardial infarction (MI). Secondary endpoints were target-lesion revascularization (TLR) and definite or probable stent thrombosis (ST).

Results: DM was present in 3,294 (31.5%) of women treated with DES. In women without DM, use of new generation compared with first generation DES was associated with reduced risks of death or MI (7.6% vs. 10.2%; adjHR 0.69, 95% CI 0.66-0.99), ST (2.0% vs. 3.1%; adjHR 0.84, 95% CI 0.47-1.49) and TLR (8.7% vs. 9.5%; adjHR 1.14, 95% CI 0.82-1.59) among women with DM (Figure). Interaction testing was significant for the outcome of def/tprob ST (p=0.04).

Supporting File(s): Location: https://www5.aievolution.com/tct2014/files/content/abstracts/abs_1716/SCAI_WIN_DES_TCT.jpeg

Conclusions: The safety and efficacy profile of new generation compared with first generation DES among women varies according to the presence of DM with enhanced benefits in women without DM.

TCT-250

A Comparison of Cobalt-Chromium Alloy Stents: Zotarolimus-eluting and Everolimus-eluting in Patients with Diabetes

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Background: It is still unknown whether different stent types of new-generation cobalt-chromium drug-eluting stent (DES) correlate with clinical outcomes in patients with diabetes.

Methods: Across 2 Italian centers, we retrospectively evaluated the primary endpoint of major adverse cardiac events (MACE) amongst patients receiving new-generation zotarolimus-eluting stents (ZES: Resolute family [Medtronic, Santa Rosa, CA]) and everolimus-eluting stents (EES: Xience family [Abbott Vascular, Santa Clara, CA]) and PROMUS stent [Boston Scientific, Natick, MA]). Secondary endpoints included the composite endpoint of all-cause mortality and any myocardial infarction (MI), and any target lesion revascularization (TLR).

Results: Four hundred patients with 553 coronary lesions treated with ZES (136 patients, 196 lesions) and EES (264 patients, 357 lesions) between October 2006 and August 2012 were included in the present study. Patient demographics and other cardiovascular risk factors were similar between the two groups. Multi-vessel PCI (23.5% vs. 14.0%, p=0.017), a PCI for restenotic lesion (26.0% vs. 15.4%, p=0.002), IVUS usage (30.1% vs. 17.4%, p=0.001) were significantly higher in the ZES group, whereas implantation of smaller vessel stents (≤2.5mm) was statistically higher in the EES group (27.6% vs. 37.8%, p=0.015). At the follow-up period of 720 days, there was no significant difference in MACE between ZES and EES (22.8% vs. 18.1%, HR=1.11, 95% CI: 0.67-1.85). Similarly no significant differences were observed in the composite endpoint of death or MI (9.1% vs. 10.3%, HR=1.14, 95% CI: 0.54-2.40) or TLR (12.4% vs. 6.9%, HR=1.53, 95% CI: 0.81-2.89).

Conclusions: The present study showed that no significant differences in each outcomes (MACE, all-cause mortality/MI, TLR) were observed in diabetic patients treated with new-generation cobalt-chromium ZES and EES. Even though, our study cohort constituted of more complex lesions and patient characteristics, our findings resemble the ones reported in previous randomized control studies in the general population.

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TCT-251

Effects of Pitavastatin on the Expression of Vascular Cell Adhesion Molecule-1 and Its Target Gene MicroRNA-126 in Cultured Human Umbilical Vein Endothelial Cell

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Background: Reducing the endothelial cell adhesion molecules (ECAMs) is conducive to the decrease of inflammation-induced vascular complications. In this study, we observed Pitavastatin on the expression of vascular cell adhesion molecule-1 (VCAM-1) and its influence on VCAM-1’s target gene miR-126 in cultured human umbilical vein endothelial cells (HUVEC) activated by tumor necrosis factor-α (TNF-α). The purpose of this study is to explore the mechanism of pitavastatin in prevention and treatment of atherosclerosis (AS).

Methods: HUVEC were cultured in M1640 supplemented with 10% bovine calf serum and passages 2 to 5 were used in experiments. The cells were randomly divided into three