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R2=0.995, p<0.001 vs y=1.04x+0.11, R2=0.97, p<0.001, and it was much more sensitive in detecting prolapsed (100 vs 14 %, p<0.001, thrombus (7 vs 0 %, p<0.01), dissection, mal-aposition qualitatively compared with IVUS.

Conclusions: This prospective multicenter study demonstrates that much more precise evaluation can be expected in coronary lesion by OCT compared with IVUS even in vivo in human. FD-OCT should be more reliable and feasible in the assessment of coronary lesion morphology more than IVUS qualitatively and quantitatively in the clinical setting.

TCT-243

Comparison of Neointimal Coverage of Everolimus-Eluting Stents and Sirolimus-Eluting Stents: Optical Coherence Tomography Subanalysis from the RESET Trial
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Background: Completing consistent neointimal coverage after implantation of a drug-eluting stent is clinically important because incomplete stent coverage is responsible for late thrombosis and sudden cardiac death. Optical coherence tomography (OCT) is emerging as a promising endovascular imaging tool for the evaluation of neointimal response after drug-eluting stent implantation. This study used OCT to compare neointimal response between Everolimus-eluting stents (EESs) and Sirolimus-eluting stents (SESs).

Methods: RESET trial was a prospective dual-arm randomized trial of EESs and SESs in 3197 patients with coronary artery disease. From the RESET trial, 90 patients (EES=54, SES=55) with 1-year follow-up OCT were investigated. Image analysis was performed at 1-mm intervals.

Results: OCT identified 9591 struts in EESs and 9425 struts in SESs. The frequency of stent struts with neointimal coverage was significantly higher in EESs compared with SESs (89% vs. 83%, p<0.001). The frequency of malapposed stent struts was significantly lower in EESs compared with SESs (0.01% vs. 1%, p<0.001). Averaged neointimal thickness (128 +/- 53 μm vs. 124 +/- 73 μm, p=0.751) and neointimal volume (25.71 +/- 14.11 mm3 vs. 23.90 +/- 17.56 mm3, p=0.553) were similar in EESs and SESs. Thrombus was observed in 2.2% of EESs and 11% of SESs (p=0.113).

Conclusions: In this OCT subanalysis from the RESET trial, neointimal coverage was incomplete in both EESs and SESs at 1-year after stent implantation. Uncovered struts and malapposed struts were less observed in EESs compared with SESs.

TCT-244

Impact of Intensive Statin Therapy on Plaque Characteristics as Assessed by Serial Optical Coherence Tomography
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Background: Recent clinical trials have demonstrated that intensive lipid-lowering therapy by statins could prevent recurrent cardiac events after acute coronary syndrome (ACS). Optical coherence tomography (OCT) is capable of estimating fibrous cap thickness (FCT) of coronary atherosclerotic plaques, which might be associated with plaque instability. This study was a prospective, randomized, open-label, dual-center analysis of the currently available clinical trials investigating IVUS guided DES implantation on clinical outcomes remains controversial. A meta-analysis of the currently available clinical trials investigating IVUS guided DES implantation was undertaken.

Methods: We searched Medline, the Cochrane Library and other internet sources, without language or date restrictions for published articles comparing clinical outcomes between IVUS- and angiography-guided DES implantation. Clinical studies with both adjusted and unadjusted data were included.

Results: Nine studies were identified and included in the meta-analysis with a weighted follow-up time of 21.7±11.8 months. Compared with angiography-guidance, IVUS-guided DES implantation was associated with a reduced incidence of death (hazard ratio [HR]: 0.58, 95% confidence interval [CI]: 0.47-0.71, p<0.01), major adverse cardiac events (HR: 0.85, 95% CI: 0.76-0.95, p<0.05) and stent thrombosis (HR: 0.62, 95% CI: 0.46-0.83, p=0.002). The incidence of myocardial infarction (HR: 0.80, 95% CI: 0.59-1.07, p=0.134), target lesion (HR: 0.97, 95% CI: 0.76-1.23, p=0.782) and target vessel (HR: 0.94, 95% CI: 0.79-1.11, p=0.455) revascularization were comparable between the angiography and IVUS-guided arms. Repeat analyses in which the IVUS guided and the angiography guided groups had similar baseline characteristics (apart from older patients and more renal insufficiency in the angiography guided arm) (n=9049), and analyses with studies that were propensity matched (n=4,128), yielded broadly similar results in terms of clinical outcomes.

Conclusions: IVUS-guided coronary DES implantation is associated with a significant reduction in death, MACE and stent thrombosis compared to angiography guidance. Appropriately powered randomized trials are necessary to confirm the findings from this meta-analysis.