implantation, balanced with a sustained antiproliferative effect up to 12 months of follow-up. A larger study is warranted to examine the safety of shortening the dual antiplatelet therapy regimen on this background.

TCT-566

GEOGRAPHICAL MISS OF STENT IS ASSOCIATED WITH PLAQUE VOLUME, VULNERABLE PLAQUE AND MAJOR ADVERSE CARDIOVASCULAR EVENTS

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Background: Angiographically-identified geographical miss (GM) of atherosclerotic plaques during percutaneous coronary intervention (PCI) is common. However, the relationship between GM and the underlying plaque as identified by virtual histology intravascular ultrasound (VH-IVUS) as not been studied. We aimed to determine whether GM is associated with specific plaque characteristics, PCI-related myocardial infarction (MIa) and future major adverse cardiovascular events (MACE).

Methods: Patients with stable angina (n=100) or myocardial infarction (MI) (n=70) underwent 3- vessel VH-IVUS prior to PCI. GM was defined as 3 uncovered VH-IVUS frames in stented lesions with plaque area >40% at either stent edge. MACE comprised death, MI, hospitalization with unstable angina or unplanned revascularization.

Results: 30372mm VH-IVUS and 1096 lesions were analysed: 858 (78.2%) plaques comprised death, MI, hospitalization with unstable angina or unplanned revascularization. GM was associated with increased plaque volume, necrotic core %, dense calcium % and VH-defined thin cap fibroatheroma (VH-TCF) and with reduced fibrous tissue % (table). GM was not associated with increased MIa (33 (54%) vs. 71 (72%), p=0.15) or inflammatory cytokine release. MACE (n=43) occurred in 28 patients over a median follow-up of 1115 [968-1537] days. MACE were directly linked to 11/858 (0.8%) unstented plaques, 7/165 (4.2%) fully covered stented lesions and 8/80 (10%) stented lesions with GM (log rank p=0.001). In patients presenting with MI, stented lesions with GM had increased future MACE compared to fully covered lesions (log rank p=0.015).

Conclusions: GM is associated with larger plaques with a more vulnerable composition and with future MACE in MI patients undergoing PCI. Whether the association of GM with future MACE is independent of adverse plaque anatomy is not clear and requires a much larger study to determine.

TCT-567

Comparison of vascular response after Everolimus-Eluting Stents and Bare Metal Stents implantation in ST-segment Elevation Myocardial Infarction Assessed by Optical Coherence Tomography

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Background: Implantation of drug-eluting stents (DES) in patients with ST-segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PCI) reduces in-stent restenosis compared with bare metal stents (BMS), however, the long-term risk of DES use in STEMI has been pointed. Previous pathologic and optical coherence tomography (OCT) study reported that first generation DES use in STEMI resulted in higher rates of uncovered and malapposed stent struts at follow-up. The long-term safety of second generation everolimus-eluting stents (EES) use in STEMI remains unknown. We used OCT to examine vascular response including soft plaque coverage and malapposition in patients with STEMI treated with EES and BMS.

Methods: We enrolled 85 patients with STEMI who underwent primary stenting and 10-month follow-up OCT (EES: 47 patients and BMS 38 patients).

Results: A total of 18244 stent struts were analyzed. There were no significant differences in the percentage of uncovered and malapposed stent struts per lesion between 2 stents (2.28±3.08% versus 1.47±2.46%, P=0.182 and 0.57±1.22% versus 0.41±0.84%,P=0.499, respectively). Averaged neointimal thickness was smaller in EES lesions (103 ± 38 μm vs. 385 ± 151 μm, P<0.001). Intra-stent thrombus was observed in 12.8% of EES lesions and 10.5% of BMS lesions (p = 0.750).

Conclusions: In STEMI patients undergoing primary PCI, there are no significant differences in the percentage of uncovered and malapposed stent struts, and the incidence of intra-stent thrombus at 10-month follow-up between EES and BMS. On the other hands, EES as compared with BMS significantly reduces neointimal hyperplasia. EES has a potential to achieve low late loss without sacrificing safety.

TCT-568

Patients Who Have Ruptured Plaque at Culprit Lesion Are At High Risk of Distal Embolization Even If They Do Not Have Acute Coronary Syndrome

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Background: Slow flow or no re-flow phenomenon during coronary intervention is mainly caused by distal embolization of thrombus and plaque debris, and is associated with unfavorable long-term clinical outcomes. This phenomenon often occurs in the patients with acute coronary syndrome (ACS) but also in some patients with stable angina. However, the high-risk patients of distal embolization are not well understood.

Methods: Consecutive patients with acute myocardial infarction (AMI) (n=192), those with unstable angina (UA) (n=89), and those with stable coronary heart disease (CHD) (n=211) who received coronary intervention with filter-type distal protection device (Filter) were prospectively enrolled. We compared between the groups the frequency of filter slow flow/no-reflow phenomenon and of distal embolization captured by the filter device. We examined by angiography if ruptured plaque was present at the target lesion and analyzed its association with filter slow flow/no re-flow phenomenon or distal embolization.

Results: Filter slow flow/no re-flow phenomenon occurred most frequently in AMI patients, although there was no difference between UA and CHD patients (43% vs. 20% vs. 18%, P<0.001). Filter slow flow/no re-flow phenomenon occurred more frequently in the patients with vs. without ruptured plaque in each patient group (AMI patients: 79% vs. 8%, P<0.001; UA patients: 57% vs. 7%, P=0.001; CHD patients: 72% vs. 6%, P<0.001). Among the patients without ruptured plaque, the incidence was not different between the patient groups.

Conclusions: Although AMI patients are at high risk of filter slow flow/no re-flow phenomenon and of distal embolization than UA or CHD patients, the risk was associated with the presence of ruptured plaque. Patients with ruptured plaque had the higher risk than those without it regardless of the diagnosis.

TCT-569

Pre-interventional Plaque Composition Assessed by Virtual Histology Intravascular Ultrasound Predicts Plaque Shift after Stent Implantation

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Background: Significant plaque shift during stenting can result in side branch compromise in certain cases. This study aimed to evaluate potential effects of