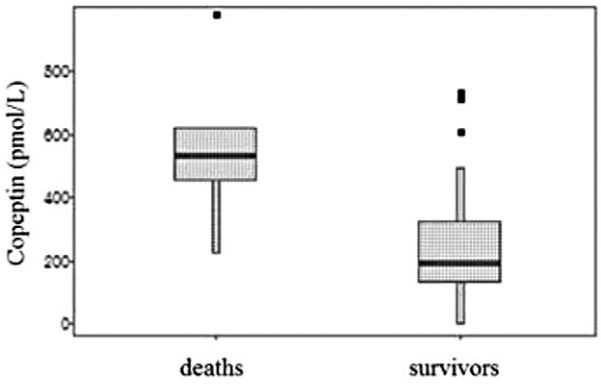

TCT-278

Two year Clinical Impact of Postprocedural Incomplete Stent Apposition and Late Acquired Incomplete Stent Apposition After Deployment of Zotarolimus Eluting Stent or Everolimus Eluting Stent

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Background: We already reported the preliminary data for the one year clinical impact of post-procedural incomplete stent apposition (PISA) and late incomplete stent apposition (LISA) in the newer generation of drug eluting stent. The aim of this study was to investigate the clinical impact of LISA and PISA during 24-month clinical follow up.
Methods: We prospectively enrolled 178 patients who underwent percutaneous coronary intervention (PCI) in de novo coronary lesions; stable angina (n=41), unstable angina (n=91), and non-ST segment elevation myocardial infarction (n=46) (63.7±9.4 years, 125 male, 187 lesions). The group was randomly assigned (proportion of 1:2) to everolimus eluting stent (group I, n=65, Xience V, Abbott Vascular, Illinois) or zotarolimmus eluting stent (group II, n=122, Endeavor Resolute, Medtronic, MN). Post-PCI and follow up intravascular ultrasound (IVUS, mean 10.2±2.9 months) were performed in all patients. We analyzed 24-month major adverse cardiac events including death, myocardial infarction (MI) and target lesion failure (TLR).
Results: The Post-PCI external elastic membrane (EEM) volume vs follow up EEM volume (group I: 368.0±169.6 mm^3 vs 373.6±167.2 mm^3, p=NS, group II: 431.0±167.5 vs 440.1±172.0 mm^3, p=NS), and post-PCI lumen volume vs follow up lumen volume (group I: 203.0±86.8 vs 201.7±86.0 mm^3, p=NS, group II: 239.2±92.7 vs 239.5±92.5 mm^3, p=NS) by IVUS were not different. There were three LISAs [1.6%, group I (n=1) vs group II (n=2)] and sixty four PISAs [34.2%, group I (n=24 vs group II (n=40)] that were resolved [12.5%, group I (n=2) vs group II (n=6)]. Post-PCI and follow up volume of PISA was not significantly different in both group I (6.4±4.3 vs 6.3±3.9 mm^3, p=NS) and group II (6.4±5.3 vs 6.2±4.3 mm^3, p=NS). Both PISA and LISA were not related with cardiac death or MI during 24-month clinical follow up. However, there were four TLRs in PISA subgroup [6.3%, group I (n=0) vs group II (n=4)].
Conclusions: The incidence of LISA was low in both groups. Both PISA and LISA were not related with cardiac death or MI during 24-month clinical follow up. Future long-term follow up study to clarify the clinical course of LISA and PISA would be needed to confirm our results.

TCT-279

Characterization of Plaque Removed by Rotational Atherectomy

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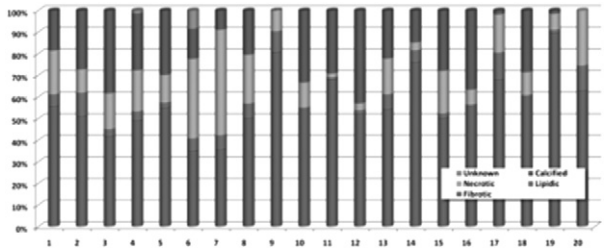
Background: Rotational atherectomy (ROTA) is a safe and effective treatment of severe calcified coronary lesions. It works by differential ablation of the inelastic components of the atherosclerotic plaque, in particular the calcified areas. However this has never been characterized in vivo. New tissue characterization techniques coupled with intracoronary ultrasound (IVUS), like iMap®(BSC, Mn), make this possible.
Methods: We present a prospective study conducted in pts submitted to ROTA under IVUS guidance using a 40 MHz probe with tissue characterization. Plaque morphology and composition was assessed pre and post ROTA. All pts had severely calcified coronary artery disease and an indication for rotablation. After collection, data was sent to an independent reviewer who was not present during the procedure. Plaque composition was quantified with QIVUS (Medis) according to percentage fibrotic, lipid, necrotic, calcified and unknown components.
Results: 20 lesions with an exact landmark matching between basal and post ROTA were analyzed, after an increment in burr of 0.25-0.50 mm. Luminal area increased on average 0.99 ± 0.82 mm^2 due to removal of an average 24.5 ± 12.0% of plaque area. Plaque composition analysis showed that most of the removed plaque was fibrotic tissue (56%), followed by calcified (19%) and/or necrotic (18%). Lipid component had little change.



Conclusions: For the first time it was possible to demonstrate in vivo the mechanism of plaque removal by rotablation. This data confirms the ability of ROTA to remove inelastic plaque, not only calcified but also fibrotic tissue, which was predominant.

TCT-280

Acute and Long-term Prognostic Impact of Attenuated Plaque in Patients with Acute Coronary Syndrome

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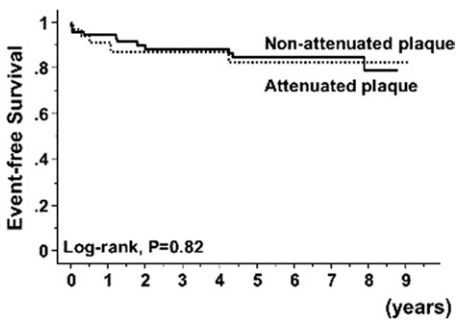
Background: Several studies have reported that culprit lesion attenuated plaque assessed by intravascular ultrasound (IVUS) is related to slow/no-reflow after percutaneous coronary intervention (PCI). Long-term prognostic impact of the culprit lesion attenuated plaque is unknown.The aim of this study was to investigate acute and long-term clinical impact of the attenuated plaque in patients with acute coronary syndrome (ACS).
Methods: A total of 110 ACS patients who underwent successful PCI under IVUS guidance were enrolled and studied. Acute and long-term clinical outcomes were compared between patients with attenuated plaque (n=73) and those without attenuated plaque (non-attenuated plaque: n=37). Long-term cardiac event was defined as a composite of death and ACS.
Results: Baseline characteristics in 2 groups were similar. Attenuated plaque was associated with higher TIMI frame count immediate after the first balloon inflation. After thrombectomy and intracoronary drug administration, final TIMI frame count became similar between attenuated and non-attenuated plaque. Although attenuated plaque was associated with higher incidence of fatal arrhythmia during hospitalization, in hospital mortality did not differ between the 2 groups. During follow-up (median 6.2 years), cardiac event-free survival was similar between the 2 groups (Figure).



Conclusions: Despite the initial unfavorable effect on coronary reflow, presence of attenuated plaque did not affect acute as well as long-term clinical outcome in patients with ACS, possibly as a result of adjunctive pharmacological or aspiration therapies.

POSTERS