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Background: Our previous studies documented acceptable efficacy of plasmonic-photothermal therapy (PPTT) with plaque burden reduction up to 79.4 mm3 and 60.3 mm3 respectively. Stenting or balloon angioplasty were utilized in order to prepare target lesion for special analysis.

Methods: This is a retrospective subanalysis of the 1-year imaging and 5-year clinical outcomes in three subsets (n=180) of NANOM-FIM trial (NCT01270139). At the first subset patients underwent stenting with XIENCE V stent proximal to the site of nano-intervention (n=13). Subjects in the second subset were undergone drug-coated balloon pre-dilation with further nano-technique (n=20). Lesions in patients of the third subset were not prepared for the nano-approach (n=147).

Results: The reduction of the TAV at 12-month follow-up was 40.9%/36.6%/42.6%, and 45.0%/46.1%/40.9% (p=0.05) in three subsets of Nano and Ferro groups respectively. A 5-year MACE-free survival achieved 39/60 (65.0%), 32/60 (53.3%), and 34/60 (56.7%) in the intention-to-treat population in groups respectively (p<0.05).

Conclusions: This is a retrospective subanalysis of the 1-year imaging and 5-year clinical outcomes in three subsets of the NANOM-FIM trial documented total atheroma volume (TAV) reduction up to unprecedented 79.4 and 60.3 mm3 respectively. But the safety options in nanomedicine raise an issue regard to the pathophysiology.

TCT-304

Retrospective analysis of long-term outcomes in NANOM-FIM trial: safety of plasmonicphotothermal therapy of atherosclerosis

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Background: Our previous bench studies PLASMONICS and NANOM First-in-Man (FIM) trial documented total atheroma volume (TAV) reduction up to unprecedented 79.4 and 60.3 mm3 respectively. But the safety options in nanomedicine raise an issue of the optimal niche of these technologies at the real-world clinical practice.

Methods: This is a retrospective analysis of the 5-year long-term clinical outcomes at the intention-to-treat population in groups respectively (p<0.05).

Results: The mortality (6 vs 9 vs 10 cases of cardiac death in groups respectively, p<0.05), MACE (14.3% of nano group vs 22.9% in stenting control, p=0.04), late thrombosis (2 vs 4 vs 6 cases in groups respectively, p<0.05) and TLR (3.6 vs 5.7% in nano and stent group respectively, p=0.04) were significantly higher in ferro group and stent control at 60-month follow-up, but the difference in the proportion of MACE-free survival and TLR incidence when compared between groups did not reach statistical significance (p=0.33).

Conclusions: The "no preparation" strategy demonstrates an optimal profile of efficacy and safety at long-term follow-up in patients underwent PPTT of atherosclerosis. The stenting proximal to nano-intervention shows superiority to the drug-coated balloon pre-dilation of the target lesion.

TCT-305

SeQuent Please Paclitaxel-Coated Balloon Angioplasty For De Novo Coronary Lesions: A Long-Term Follow-Up Study

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Background: Paclitaxel-coated balloons (PCB) have been demonstrated to be successful for the treatment of in-stent restenosis; however, their role in the treatment of de novo lesions is unclear. This study aimed to evaluate the long-term safety and efficacy of the second-generation SeQuent Please PCB for the treatment of de novo coronary lesions.

Methods: Between May 2009 and April 2011, all consecutive patients with de novo coronary lesions treated with the SeQuent Please PCB at our institution were prospectively included. Bare-metal stent (BMS) were implanted if the result after PCB therapy alone was not satisfactory because of recoil, residual stenosis or dissections. Patients were followed up for 24 months by clinical observation. The primary endpoint was the clinically driven target lesion revascularization (TLR) rate at 24 months. The secondary endpoint was the rate of major adverse cardiac events (MACE: cardiac death, myocardial infarction, and TLR) at 24 months.

Results: 53 patients with 56 lesions were included. Mean age was 66.1±11.9 years. 62.5 % were male and 50 % were diabetics. The majority of patients presented with unstable angina (44.6%). The target lesion was mainly located in the left anterior descending coronary artery (60.7%) and 23.2 % were bifurcation lesions. The mean reference vessel diameter was 2.4±0.4 mm and the mean target lesion length was 18.1±6.2 mm.Procedural success was 98.2%. Coronary dissection occurred in 7 patients (12.5 %) and no vessel thrombosis was documented. Additional BMS was implanted in 14 target lesions (25%). Follow-up rate was 94.3 %. The TLR rate at 24 months was 5.4 %. The MACE rate at 24 months was 8.9 %, with 1.8 % cardiac death and 3.6 % myocardial infarction. Baseline and procedural data for patients with PCBs versus BCs did not differ. The TLR and MACE rates did not differ between PCB angioplasty with and without additional BMS implantation (TLR: 0% vs.7.1%, p=0.56; MACE: 7.1 % vs. 9.5 %, p = 0.78).

Conclusions: Treatment of de novo coronary lesions with the second-generation SeQuent Please PCB provides good clinical outcomes demonstrated by the low TLR rate and low MACE rates at long-term follow-up.
Conclusions: Failure to cannulate the LIMA selectively is far more common than non-selective (NON, > 5 mm from ostium). The quality of visualization of the vessel supplied by the LIMA was evaluated by investigators blinded to selectivity of catheter placement.

Results: During the period, 6,358 coronary angiograms were performed; 406 patients had a total of 7,936 LIMA injections; 49.7% were SUPER or SEL, 34.5% SEMI, and 15.9% NON. Only 45.7% of injections resulted in excellent distal vessel visualization, 16.4% were rated good; the remaining 37.9% were fair or poor. Selectively correlated strongly with distal visualization (Figure): excellent in 83.5% of SUPER, 61.0% of SEL, 21.4% of SEMI, and 3.3% of NON (P<0.001).

TCT-308
Impact of Coronary Artery Spasm on Development of New-onset Diabetes Mellitus in Asian Population
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Background: There have been several reports that endothelial dysfunction predicts type 2 diabetes. It is still controversial whether a coronary artery spasm (CAS) is a risk factor of new-onset diabetes mellitus (DM), especially in Asian population.

Methods: We investigated the 4,231 patients (pts) who had Hba1C level < 6.0% and fasting glucose level < 100 mg/dL. (CAS group = 300 and control group = 3,928). CAS was defined as transient coronary artery narrowing 70% or more by acetylcholine provocation test. To adjust confounders including age, gender, hypertension, hyperlipidemia, chronic kidney disease, hyper/hypo-thyroidism, lipid profile, beta-blocker, diuretics, a propensity score matched analysis was performed. The primary end-point was the cumulative incidence of new-onset DM (HbA1C level > 6.5% or fasting glucose level > 126 mg/dL). Also, multivariable cox-regression analysis adjusted by aforementioned variables was performed to determine the impact of CAS on the incidence of new-onset DM.

Results: Mean follow-up duration was 908±558 days in all-pt group, and 805±579 days in FSM group. Baseline characteristics were similar between the two groups in FSM cohort. In Kaplan-Meyer curve, there was no difference between the two groups (p=0.937, figure A). Also, in cox-regression analysis performed in all pts, presence of CAS was not associated with the increased incidence of primary end-point (figure B).

Conclusions: In our study, there was no clear association between CAS and new-onset DM in a series of cardiovascular pts in Asian population.

TCT-309
Impact of Hyperuricemia on Coronary Artery Spasm as assessed with Intracoronary Acetylcholine Provocation Test
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Background: Hyperuricemia is known to be associated with cardiovascular complications. However, there are limited data whether there is a clear association between hyperuricemia and significant coronary artery spasm (CAS) as assessed with intracoronary Acetylcholine (Ach) provocation test.

Methods: This study consisted of 5,324 consecutive patients (pts) who underwent coronary angiography with Ach provocation test from January 2004 to September 2012. Study population were; Hyperuricemia group (>7mg/dL, n=216) and Control group (<7mg/dL, n=2,462). Significant CAS was defined as transient >70% luminal narrowing with chest pain and/or ST segment changes.

Results: The baseline clinical characteristics were balanced between the two groups except the hyperuricemia group had more male gender, hypertension, current smoker, current alcoholics and higher body mass index, whereas the control group had more elderly. During the Ach provocation test, the hyperuricemia group showed higher incidence of multivessel spasm and ischemic EKG change (Table). Other major angiographic and clinical parameters were similar between the two groups.

Conclusions: In the present study, although the incidence of CAS with Ach provocation test was not different in both groups, the pts with hyperuricemia was significantly associated with higher incidence of multivessel spasm and ischemic ST-T change during the Ach provocation test as compared with pts without hyperuricemia.

TCT-310
Impact of Ischemic EKG Changes during the Acetylcholine Provocation Test on 12-month Clinical Outcomes in Patients with Vasospastic Angina
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Background: Clinical significance and angiographic characteristics of patients with ischemic EKG changes during the Ach provocation test are not clarified yet as compared with pts without EKG change.

Methods: A total 3034 consecutive pts underwent coronary angiography with Ach provocation tests were enrolled. EKG changes were defined as ST segment depression or elevation (>1mm) and T inversion with/without chest pain. We compared the clinical and angiographic characteristics of patients with EKG changes to those without EKG changes.

Results: The baseline clinical and procedural characteristics are well balanced between the two groups. EKG change group showed more frequent chest pain, higher incidence of baseline spasm, severe vasospasm, multi-vessels involvements, and more diffuse spasm (>30mm) than those without EKG changes (Table 1). At 12 months, the incidence of mortality and myocardial infarction were higher in the EKG change group. There was a trend toward higher incidence of target vessel revascularization (TVR)-major adverse cardiac events (MACE) in the EKG change group (Table 2).

Conclusions: The pts with EKG changes during the Ach provocation tests were associated with more frequent chest pain, baseline spasm, diffuse, severe and