TCTAP A-061

Factors Which Determine Compression of Surrounding Structures in Amplatzer Septal Occluder Following Transcatheter Closure of Atrial Septal Defects

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Background: Cardiac erosion and perforation after ASD closure with device have been reported. Some reports suggest that cardiac erosion may have been associated with compression of surrounding structures following deployment. However, the risk factor of the compression of surrounding structures has not yet been clarified. The aim of this study is to evaluate factors which may determine compression of surrounding structures following deployment.
Methods: We conducted a retrospective review of all patients with isolated ASD treated using ASO in our center, until the end of 2013. Various factors in the patient profile and TEE findings were compared between the groups with and without change in compression of surrounding structures following deployment using ANOVA and logistic regression analysis. Linear regression analysis was performed to assess the correlation. All p values less than 0.05 were considered significant.
Results: Thirty four patients with isolated ASD treated using ASO in our center. The average age at deployment was 38.1 ± 23.6 with an average long axis defect size of 15.5 ± 5.0mm. There were no multiple and malaligned ASD, but one aneurysmal ASD. Shorter anterior rim length was associated with compression of aortic wall ($P<0.05$). Shorter atrial length and larger ratio of defect size and atrial length were associated with compression of atrial wall to by the RA disk in the superior side ($P<0.05$). All comparisons between the devise size, the existence of flimsy rim, and compression of surrounding structures following deployment showed no significant difference.
Conclusion: Compression of surrounding structures following deployment may have been affected not by device size, but by the length of rim, the defect size, and the ratio between the defect size and the atrial length.

Drug-eluting Stents
(TCTAP A-062 to TCTAP A-074)

TCTAP A-062

Preliminary Clinical Research of PCI Through Transulnar Approach in Selective Patients with Coronary Artery Disease

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Background: This study was conducted to assess the safety and feasibility of PCI through transulnar approach in selective patients with coronary artery diseases.
Methods: 12 patients with stable angina pectoris (male 8,female 4; age 61±10.4 years) whose ulnar artery diameter was larger and Allen's test was positive. We recorded the puncture time of ulnar artery, CAG time, the success rate of ulnar puncture and complication rate.
Results: 25 ulnar arteries were punctured successfully, the puncture time was 5±2.4min, and CAG time was 20±3.6min.Seventeen lesion segments of fifteen vessels in 12 patients were implanted stent successfully by 6F guiding catheter.
Conclusion: The ulnar artery might be selected as one access for PCI procedure. It is safe and effective approach for coronary intervention, and may be widely used in clinical practice.

TCTAP A-063

Inflammatory Effects and Clinical Outcomes of High-pressure Post-dilation with Non-compliant Balloon During Drug-eluting Stent Implantation

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Background: The acute inflammatory response of high-pressure post-dilation with non-compliant balloon (HPNC) after drug-eluting stent (DES) deployment remains still unknown. We sought to evaluate the inflammatory effects and clinical outcomes of HPNC after DES implantation.
Methods: We enrolled consecutive patients with stable angina pectoris, who were treated with single drug-eluting stent deployed by nominal pressure in de novo ischemia-related coronary artery. In this per-protocol study, patients were divided into HPNC group (14atm) or non-HPNC group. The development of inflammatory markers (C-reactive protein and interleukin-6) was used to evaluate the acute inflammatory response of HPNC (baseline, 1, 6, 24 and 72 hours after procedure). The baseline reference vessel diameter, minimal stent diameter soon after DES deployment, and final minimal stent diameter after HPNC were measured by quantitative coronary analysis. All patients were followed up for 1 year.
Results: There was no significant difference between the HPNC group (n = 42) and non-NPNC group (n = 11) with regard to the changes of inflammatory markers (CRP, $p = 0.739$; IL-6, $p = 0.936$) within 72 hours after procedure. The minimal stent diameter after HPNC was larger compared with soon after stent deployment (2.71 ± 0.43mm vs 2.47 ± 0.41mm, $p < 0.001$). The percentage to reference vessel diameter after HPNC was also larger compared with soon after stent deployment (85.5 ± 12.1% vs 77.9 ± 11.8%, $p < 0.001$). There was no adverse coronary event in the two groups at 1 year.
Conclusion: The acute systemic inflammatory response induced by HPNC appeared to be similar to that induced only by stent deployment. HPNC achieved larger stent diameter, which was associated with similar in-hospital and long-term outcomes compared with stent deployment only.

TCTAP A-064

Midterm Clinical and Angiographic Outcomes After Placement of Paclitaxel and Everolimus-eluting Stents for De Novo Native Coronary Stenosis

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Background: We conducted a propensity score matched lesion-based comparison of mid-term clinical and angiographic outcomes after paclitaxel- (PES: TAXUS Liberte) and everolimus- (EES: XIENCE V / PROMUS and XIENCE Prime) eluting stent implantation for de novo native coronary stenosis.
Methods: During from February 2009 to August 2012, 1607 nonrandomized consecutive de novo native coronary lesions treated either with a PES (1028 lesions) or EES were enrolled in this study, and a retrospective examination was conducted in August 2013.
Results: The incidences of the clinical endpoint comprising of cardiac death, nonfatal recurrent myocardial infarction, and definite stent thrombosis after placement of PES (1.3%) and EES (0.7%) groups were very low. In the baseline-adjusted angiographic followed-up lesions (n= 471 in each arm), the incidence of binary restenosis (percent diameter stenosis [%DS] >50%) in the PES group (12.5%) was significantly higher than that in the EES group (3.4%, $p<0.001$). EES significantly related to binary restenosis TCTAP A-067 (Odds ratio, 0.20; 95% CI, 0.11-0.37; $p<0.001$).
Conclusion: The present propensity score matched lesion-based analysis firstly showed that EES showed the far better mid-term angiographic outcome compared to PES with statistical equivalent very low incidence of severe cardiac events for de novo native coronary lesion in Japanese daily practice environment.

TCTAP A-065

To Evaluate Clinical Results of Repeat Drug-eluting Stent (DES) Implantation for DES Restenosis at Coronary Artery Lesions with High Degree Hinge Motion

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Background: There was no report that evaluated clinical results after repeat drug-eluting stent (DES) implantation for DES restenosis at coronary artery lesions with high degree hinge motion.
Methods: From April 2007 to December 2009, subjects were serial 133 patients who underwent repeat154 DES implantation for DES restenosis. Hinge motion by the difference in the angle between diastole and systole: δ angle more than about 20 degree was defined high degree hinge motion in the target lesion. From the base-line CAG finding, Patients with DES restenosis at target lesions with high degree hinge motion were defined as the H group (41 patients,46 stents) and those whose were not confined high degree hinge motion were defined the Non-H group (92 patients,108 stents). The two groups were compared for 12-month outcomes.
Results: There was no significant difference in the percentage of diabetic patients (H: 52.2 vs. Non-H: 56.5%) or target lesions in LAD (H: 50.0 vs. Non-H: 50.9%). The H group had high rates of stent fracture in stent restenosis site (H: 65.0 vs. Non-H: 15.4%, P=0.005) than that of Non-H group. At the 12-months clinical results, There was no significant difference in the rate of stent re-restenosis (H: 38.1 vs. Non-H: 27.0%) or second target lesion revascularization (TLR) (H: 23.9 vs. Non-H: 20.4%).
Conclusions: The second TLR rate after repeat DES implantation for DES restenosis at target lesions with or without high degree hinge motion was similar.

TCTAP A-066

Neo-Atherosclerosis in Drug-eluting Stents Is the Risk of Recurrent Restenosis

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Background: Drug-eluting stents (DES) reduced target lesion revascularization compared with bare metal stent (BMS); however, the restenosis after DES implantation still occurs especially in the late phase. DES restenosis is usually treated by balloon angioplasty, cutting balloon angioplasty, debulking techniques, and/or DES-in-DES stenting. Unfortunately, the recurrence of in-stent restenosis (ISR) sometimes occurs and its mechanisms is unclear. We examined the influence of in-stent neo-atherosclerosis as shown by the presence of yellow plaque on ISR recurrence.
Methods: Consecutive 20 patients who received angioplasty for ISR in DES were prospectively enrolled. Their culprit lesions were examined by angioscopy