Lesion Characteristics at the Time of the Initial DES Implantation Procedure

	ST Group Lesion n=382	Control Group Lesion n=421	p value
Left Main Lesion	0%	0.7%	0.251
LAD Lesion	40.3%	34.7%	0.099
LCX Lesion	18.1%	25.4%	0.012
RCA Lesion	37.4%	37.5%	0.978
Bypass Graft Lesion	4.2%	1.7%	0.032
Type C Lesion	80.4%	85.5%	0.052
Pre TIMI Flow 0	18.6%	10.9%	0.002
Thrombus	39.9%	28.9%	0.001
Lesion Length mm	19.53 +/− 12.01	16.84 +/− 10.02	0.001
Reference Vessel Diameter mm	2.76 +/− 0.43	2.71 +/− 0.45	0.123
Pre MLD mm	0.67 +/− 0.47	0.75 +/− 0.46	0.018
Pre Diameter Stenosis %	75.90 +/− 16.50	72.61 +/− 15.82	0.004
Final In Stent MLD mm	2.56 +/− 0.41	2.60 +/− 0.46	0.201
Final In Segment MLD mm	2.27 +/− 0.42	2.26 +/− 0.45	0.866
Final In Segment Acute Gain	1.60 +/− 0.53	1.52 +/− 0.55	0.027
Final In Stent Diameter Stenosis %	8.98 +/− 8.96	6.06 +/− 9.22	<0.001
Final Stented Length mm	28.23 +/− 15.69	22.80 +/− 12.46	<0.001
Final TIMI Flow III	96.1%	97.4%	0.305
Abrupt Closure/No Reflow	0%	0%	–

TCT-622

Angiographic Outcomes in "One-Stop" Hybrid Coronary Revascularization vs. Percutaneous Coronary Intervention for the Treatment of Multivessel Coronary Artery Disease: A Propensity Score Matching Analysis

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Background: "One-stop" hybrid coronary revascularization (HYBRID) with LIMA-LAD bypass grafting and DES implantations in non-LAD lesions is a newer therapy for the treatment of multivessel coronary artery disease. The present study aimed to compare the angiographic patency rates between HYBRID and PCI at mid-term repeat coronary angiogram.
Methods: From June 2007 to December 2009, 104 patients underwent HYBRID and 7165 patients underwent PCI with DES implantations at our center. The major inclusion criteria of the study are: 1) triple vessel disease including revascularizable LAD lesion; 2) heart team consensus reached that either HYBRID or PCI could be performed in each individual; 3) no chest pain and MACCE occurred during clinical follow-up. According to these, 102 patients in Hybrid group and 157 patients in PCI group who agrees to take repeat angiogram were enrolled. From October, 2010 to December, 2011, 50 HYBRID patients signed the agreement and underwent angiogram. Among the 157 PCI cases, 50 patients (1:1) are selected for repeat angiography with the use of propensity score matching method.
Results: The angiographic follow-up durations were similar the two groups (18 ± 8.03 months vs. 19.3 ± 9.12 months). There are no significant differences in baseline characteristics. There were 50 LIMA grafts and 64 non-LAD target vessels in Hybrid group; the angiographic target vessel patency rate was 89.5%, and the TLR rate was 7.9%. In PCI group, the angiographic target vessel patency rate was 82.7%, and the TLR rate was 20.4%. There was no significant difference in overall patency between the Hybrid group and PCI group (89.5% vs. 82.7%, p=0.07), but a significantly higher patency rate of LIMA-LAD graft in Hybrid group vs. that of stented LAD in PCI group (98% vs. 80%, p=0.004); and no significant difference in non-LAD target vessel patency between the two groups (82.8% vs. 85.2%, p=0.727).
Conclusions: Compared to PCI with DES implantations, the treatment of multivessel coronary artery disease with "one-stop" hybrid revascularization demonstrated that the patency rate of LIMA-LAD graft was superior to that of PCI in LAD, and the non-LAD vessel patency rate was similar in two groups.

TCT-623

Efficacy of Additional Ballooning with a Dual Wire Balloon After Rotational Atherectomy to Expand the Drug-Eluting Stent for Heavily Calcified Coronary Lesions

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Background: Calcified lesions have been known as a cause of stent underexpansion which increases the risk of thrombosis and in-stent restenosis. We evaluated a combination therapy using a dual wire balloon with integral nitinol wire after RA for heavily calcified lesions.
Methods: 64 consecutive heavily calcified lesions which need rotational atherectomy (RA) for stent implantation were evaluated. 18 lesions without intravascular ultrasound (IVUS) results and 6 lesions with chronic total occlusion were excluded. 22 lesions treated with a combination therapy using a dual wire balloon after RA. The other 18 lesions were treated with RA alone or the combination therapy using the conventional semi-compliant balloon and RA. After RA, the drug eluting stent (DES) was implanted in all cases. Just after RA, the section with smallest luminal cross sectional area (CSA) with an angle of more than 180 degree calcification was identified by IVUS and the following measurements made at the lesion. Angiographic findings were evaluated just after treatment and 11 months after treatment.
Results: Baseline patient's characteristics, lesion characteristics calculated by quantitative coronary angiography, therapeutic procedures were not different between 2 groups. Before implantation of DES, a dual wire balloon enabled adequate dilatation with significantly more cracks without major complications. The minimal stent CSA and the stent expansion ratio which calculated the measured minimal stent CSA divided by the minimal stent CSA predicted by the compliance chart, were similar in both groups. However, the symmetrical expansion was significantly accomplished in the dual wire group compared to the other group (mean ratio calculated by dividing the shortest diameter by the longest diameter at the site of the minimal stent CSA was 0.81±0.06 vs. 0.77±0.06, P=0.02). Moreover, the angiographic restenosis rate (6.25% vs. 18.2%, P=0.55) and the target vessel revascularization rate (0% vs. 9.1%, P=0.39) at 11 months after treatment were not significantly different in both groups.
Conclusions: By using a dual wire balloon after RA, the adequate symmetrical stent expansion and the acceptable mid-term outcomes were accomplished.

TCT-624

Clinical Outcomes with Everolimus-Eluting Stent for the Treatment of Cardiac Allograft Vasculopathy

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Background: Transplant coronary artery disease (TCAD) is a major cause of mortality in patients who are status post orthotopic heart transplantation (OHT). Use of systemic everolimus in OHT patients has been shown to reduce the incidence of TCAD. The safety and efficacy of Xience V, a second-generation everolimus-eluting stent (EES), has not been previously studied in OHT patients.
Methods: Patients with OHT who had hemodynamically significant CAD (left main ≥50%, or angiographic diameter stenosis ≥70%), and underwent percutaneous coronary intervention (PCI) with EES were included in the study. We examined procedural success rates, in-hospital and one year mortality and myocardial infarction rates. Primary outcome was target lesion revascularization (TLR). Follow up angiograms were performed at 1 year. Quantitative coronary analysis was used for stenosis analysis.
Results: PCI was performed in 24 lesions, and 26 denovo EES were placed. One stent was placed into the left main artery, 12 in left anterior descending, 7 in right coronary artery, and 4 in the left circumflex. The average stent length was 15 ±4.9mm and the average stent diameter was 3 ± 0.6mm. Procedural success rate was 100%. All patients had angiographic follow-up (325 ± 128 days). There were no periprocedural, 30-day, or 1 year deaths/ MIs. No stent thrombosis was noted; 1 patient had focal in-stent restenosis. Target vessel revascularization (TVR) rate was 4.1% (1/24), and TLR rate was 3.8% (1/26).

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