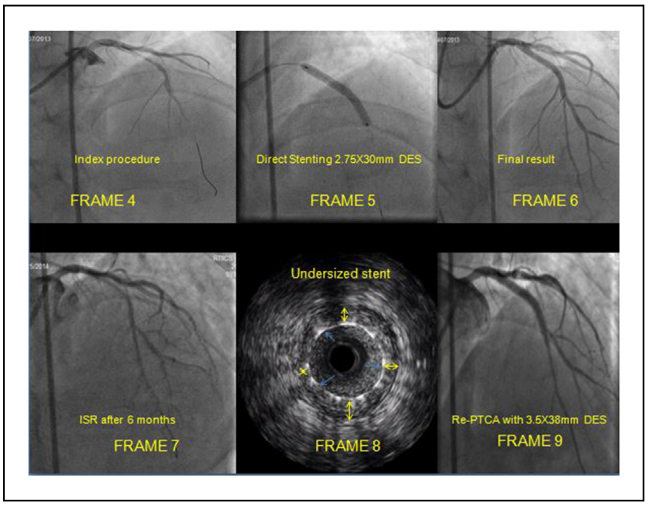

TCTAP A-089

Reduction of In-Stent Thrombus Immediately After Percutaneous Coronary Intervention by Pretreatment with a Lower Dosage of Prasugrel Compared to a Standard Dosage of Clopidogrel: An Optical Coherence Tomography Study in Asian Populations

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BACKGROUND Prasugrel at loading/maintenance doses of 60/10mg reduced ischemic events after percutaneous coronary intervention (PCI) compared with clopidogrel 300/75 mg but increased bleeding. Considering the higher average age and lower body weight of Asian patients compared with Western patients, recent studies used a lower dosage (20/3.75 mg) of prasugrel in Japanese patients and revealed its clinical efficacy and safety compared with the standard dosage of clopidogrel.

METHODS The aim of this study was to compare in-stent thrombus inhibition effect of pretreatment with the lower dosage of prasugrel and the standard dosage of clopidogrel by optical coherence tomography (OCT) immediately after PCI for acute coronary syndrome (ACS). We performed OCT immediately after PCI in 108 ACS patients pretreated with either prasugrel (n = 51) or clopidogrel (n = 58).

RESULTS The mean thienopyridine-to-balloon time in the prasugrel group and the clopidogrel group was 26.0 ± 26.0 hours and 26.8 ± 25.9 hours, respectively (p = 0.887). OCT detected thrombus/tissue protrusion in all stent segments. Thrombus/tissue protrusion was detected in all stent segments. Although stent volume (190.4 ± 119.1 mm^3 vs. 189.4 ± 95.8 mm^3, p =0.961), thrombus/tissue protrusion volume (1.8 ± 2.9 mm^3 vs. 4.5 ± 5.3 mm^3, p = 0.002), mean thrombus/tissue protrusion area (0.1 ± 0.1 mm^2 vs. 0.2 ± 0.2 mm^2, p = 0.005) and maximum thrombus/tissue protrusion area (0.5 ± 0.7 mm^2 vs. 0.8 ± 0.6 mm^2, p = 0.007) were significantly smaller in the prasugrel group compared with the clopidogrel group.

CONCLUSION Pretreatment with the lower dosage (20/3.75 mg) of prasugrel was associated with significantly reduced in-stent thrombus/plaque protrusion immediately after PCI for ACS in comparison with pretreatment with the standard dosage of clopidogrel.

TCTAP A-090

Bioresorbable Vascular Scaffolds Implantation Technique Utilizing Invasive Imaging with Optical Coherence Tomography. Influence on Clinical Outcome

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BACKGROUND Bioresorbable vascular scaffolds (BVS) have shown their safety and applicability in series of clinical trials. According to these studies number of adverse outcomes comparable with adverse outcomes of modern drug eluted stents. Presumably, these adverse outcomes driven by undiagnosed malaposition and inadequate predilation. This hypothesis is indirectly confirmed by fact that most adverse effects occur within three weeks after bioresorbable vascular scaffold implantation. Previous publications have shown that regardless careful following manufacturer instructions, optical coherence tomography (OCT) founds indications for further BVS optimization in 25-40%.

Aim of our study was to found, whether OCT after BVS implantation influence long term clinical outcome.

METHODS Since 2014 to August 15 we have 32 cases with implantation of BVS. 16 patients operated under conventional X-Ray visualization founded control group. OCT (Light Lab, St. Jude Medical) guided BVS (Absorb, Abbot Vascular) implantation for 16 patients in experimental group. Clinical follow up scheduled after 3 months of BVS implantation using telephone interviewing with standard blank. 12 months after patients undergoing coronary angiography with OCT.

RESULTS Patient population statistics listed in table 1.

Group	Age	Gender	Postinfarction cardiac sclerosis	CHF class	CABG	DM	Artery	Number of BVS
Control	59.8; SD 8.73 (95% CI 55.3; 63.9)	M 58.3%	31.25%	I 25% II 62.5% III 12.5%	12.5%	31.25%	LAD 68.75% LCX 31.25% RCA 18.75%	23; 1.4375
OCT guided	61.3; SD 9.2 (95% CI 56.8; 65.8)	M66.6%	37.5%	I 18.8% II 68.7% III 12.5%	12.5%	37.5%	LAD 87.5% LCX 6.25% RCA 12.5%	22; 1.375

Totally installed BVS 55, 22 in experimental and 23 in the control group. In the OCT group, 8 cases out of 16 (50%) had suboptimal results: 1 dissection and atherosclerotic plaque prolapse (pic. 1) - implantation of second BVS and post dilatation; one eccentric scaffold expansion (pic. 2); 6 - scaffold malaposition (pic. 3), corrected by postdilation with noncompliance balloons.

All patients were discharged within 3 days after surgery. 3 months later they were interviewed by telephone survey.

31/32 patients noted reduced ischemic pain and improved quality of life. One patient in the control group died within 1 month after BVS implantation of acute myocardial infarction.

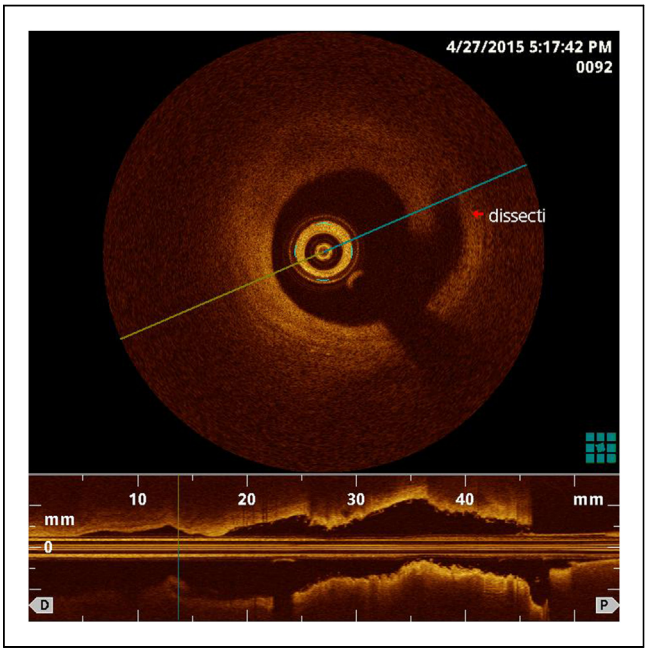
Currently we done 12/16 coronary angiography with OCT in the experimental group and 3/16 in control group. Results of angiographic and OCT control listed in Table 2.

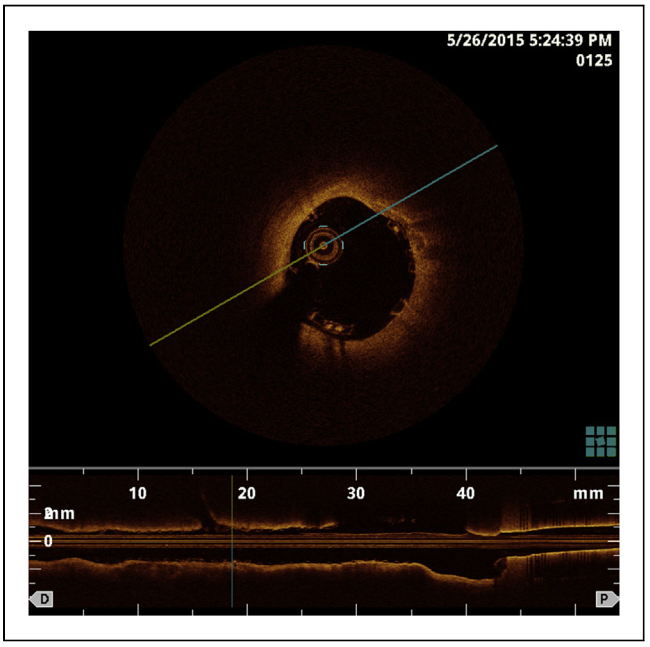
Table 2

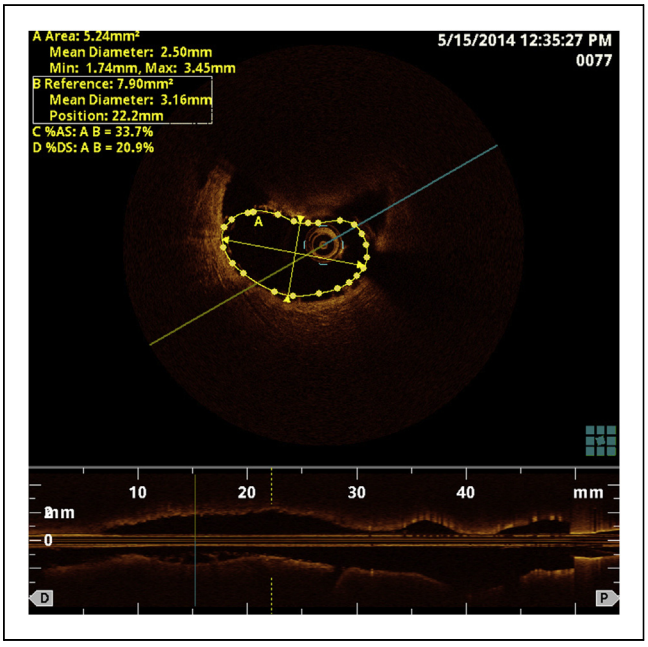
Group	N° of patients	Normal neoendothelization	Restenosis	New lesions in other segments
Control	3/16	1/3	2/3, 66% HR 5.5	1/3
Experimental	12/16	11/12	1/12, 8.3%	4/12

In the control group 2/3 in scaffold restenosis were found and 1 stenos distal to site of BVS.

In the OCT group, 1/12 were found in scaffold neointima hyperplasia without significant blood flow compromising.







CONCLUSION

1. Overall, OCT after successful BVS implantation found indication for its further optimization in 50% (8/16).
2. OCT guided BVS implantation reduces in scaffold restenosis. (preliminary HR 5.5, according to current data).
3. OCT guided BVS implantation improves long term clinical outcome (more patient follow up required).

TCTAP A-091

Different Plaque Re-Distribution Between Non-Slip Element Balloon and Conventional Balloon in De Novo Coronary Artery Lesions: 3D-IVUS Study

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BACKGROUND Although scoring balloon usage as pre-dilatation is expected different vessel response compared with conventional balloon usage, detailed mechanism has not been evaluated. The Lacrosse non-slip element (NSE) balloon is an angioplasty catheter with 3 longitudinal elements that produce 3 endovascular surgical incisions during balloon dilation. This aim of this study was to evaluate plaque re-distribution pattern between NSE and conventional balloon (POBA) using 3D-IVUS.

METHODS A total of 62 de novo coronary lesions (NSE: 32, POBA: 30) were enrolled in this study. 3D-IVUS analysis performed at in-stent/reference segment after stenting, and corresponding diseased segment before stenting were identified for comparison (entire lesion analysis). In addition, stented segment were divided into 3 segments (5mm in each) for detailed comparison (segmental analysis). Volume index (VI: volume/length) was calculated for vessel, lumen, and plaque.

RESULTS Vessel VI before stenting was similar between the 2 groups at stented segment. For entire lesion analysis, vessel and peri-stent plaque VI after stenting were significantly smaller in the NSE group compared with the POBA group, while stent VI was similar between the 2 groups. In terms of reference segments, minimum change was observed at both proximal and distal reference segment. Based on segmental analysis, vessel response was similar to entire analysis for both groups, suggesting that less vessel enlargement and more plaque compression was observed in NSE.