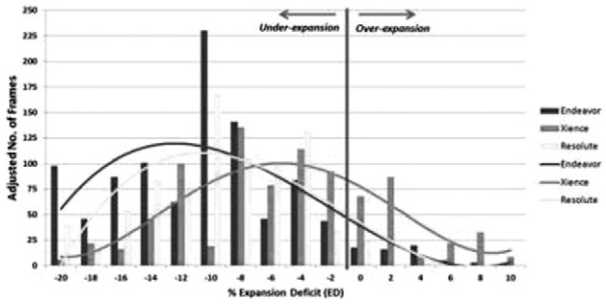
vs. non-LAD lesions (-12.07% vs. -8.07%, p < .0001). The highest ED (-12.05%, p<.001) was in 3.0 mm DES. ED correlated with plaque burden for Endeavor (r = -0.267, p<0.001) and Xience (r = -0.17, p<.01), but not Resolute (r = 0.006, p=0.92).

Figure 1: Adjusted Frequency Distribution of Expansion Deficit for Endeavor, Xience, Resolute DES



Conclusions: Actual DES expansion is consistently less than predicted despite high-pressure deployment. Inter-stent differences and lesion/vessel-specific variables impact stent performance in vivo. These data have implications on stent selection/deployment and underscore the value of post-DES intravascular imaging.

TCT-306

Intravascular Ultrasound Findings In Complex Coronary Bifurcation Lesions Treated with Single Stenting Versus Double Stenting Strategies

RICARDO COSTA[1], Fausto Feres[2], Rodolfo Staico[3], Jose Costa Jr[4], Dimytri Siqueira[3], Alexandre Abizaid[5], Luiz Fernando Tanajura[3], Amanda Sousa[3], J Eduardo Sousa[3], Antonio Colombo[6]
[1]INSTITUTO DANTE PAZZANESE DE CARDIOLOGIA, SAO PAULO, Brazil, [2]N/A, São Paulo, Brazil, [3]Dante Pazzanese, São Paulo, Brazil, [4]Instituto Dante Pazzanese de Cardiologia, São Paulo, Brazil, [5]Visiting Professor Columbia University, São Paulo, Brazil, [6]EMO GVM Centro Cuore Columbus srl, Milan, Italy

Background: The lesion luminal area after percutaneous treatment, as assessed by intravascular ultrasound, has demonstrated significant predictive value in the late follow-up of patients undergoing PCI. The objectives of this analysis were to evaluate the lesion luminal dimensions of complex coronary bifurcation lesions, as assessed by intravascular ultrasound, and to correlate such findings with acute and late outcomes.
Methods: Between may 2008 and august 2009, 54 patients with complex bifurcation lesions, including significant involvement (> 50% stenosis) of both branches and side branch lesion length extending from its ostium, were randomized for treatment with single stenting (provisional strategy) (n = 27) versus double stenting (n = 27).
Results: During procedure, 6 pts allocated for single stenting presented side branch failure (> 50% residual stenosis, TIMI flow < 3 or dissection), given that 5 pts received an additional stent in the side branch in order to optimize the angiographic result. At final procedure, the mean minimum lumen area at the side branch ostium (primary endpoint) were 3.37±1.62) mm^2 in single stenting versus 5.50±1.41 mm^2 in double stenting (p<0.001), according to the randomized allocation. At 9-month angiographic follow-up at 9 months, the restenosis rates in the side branch were 21.7% in single stenting versus 4% in double stenting (p = 0.06), given that all recurrences involved the ostial location. Considering the treatment received, the side branch restenosis rate was significantly increase among patients treated with single stenting versus double stenting (27.8% versus 3.3%, p = 0.01). The predictors of angiographic restenosis in the side branch included minimum lumen area in the side branch ostium at final procedure (p = 0.03).
Conclusions: These results suggest that final luminal dimensions at the side branch ostium may be impact late outcomes of complex bifurcation lesions undergoing percutaneous treatment. Thus, complex coronary bifurcation lesions may benefit from a primary percutaneous approach with double stenting strategy, given that most such benefit was associated with a larger lumen area obtained at the side branch ostium.

TCT-307

Comparison of optical coherence tomography and intravascular ultrasound imaging for left main stenting

Thibault Lhermusier[1], Nicolas Boudou[2], Didier Carrié[2], Nicolas Dumonteil[3], Meyer Elbaz[4], Pascal Motreff[5], Charlotte Trouillet[2]
[1]CHU RANGUEIL, Toulouse, France, [2]Cardiovascular and Metabolic Pole, Rangueil Hospital, Toulouse, Toulouse, France, [3]Cardiovascular and Metabolic Pole, Rangueil Hospital, Toulouse, France, [4]CHU RANGUEIL, toulouse, France, [5]Clermont-Ferrand University Hospital, Clermont-Ferrand, France

Background: Optical coherence tomography (OCT) can provide detailed informations after stent implantation with a 10 fold better resolution than IVUS. Otherwise, intravascular ultrasound guidance (IVUS) is useful in stenting, particularly in case of unprotected left main coronary artery stenosis. This study aimed to compare OCT to IVUS performance to assess immediate results after left main percutaneous coronary intervention (PCI) and to detect complications after left main stenting.
Methods: Patients with unprotected left main stenosis refered for PCI because of high risk surgery or low syntax score were included at our centre. T provisional stenting with last generation drug eluting stent was the predefined planned strategy. OCT and IVUS analysis were performed immediately after PCI for each patients in the main branch. Additional procedures (balloon inflation, second stent) was left at the discretion of the operator, depending of OCT and IVUS results. Images from OCT and IVUS were analyzed by 2 operators to look at stent expansion, stent apposition and vessel dissection.
Results: 15 patients were finally included. OCT and IVUS was successfully performed without any specific complication. A stent underexpansion was found in 3 patients and no difference between IVUS and OCT efficiency was found for this criteria. For one patient, a vessel dissection at the distal edge of the stent was observed by OCT but not by IVUS. Concerning stent apposition, a circumferential stent malapposition was found in 4 patients by OCT at the proximal part of the stent and was not seen by IVUS. Local malappositions were also found in 3 patients by OCT compared to only one confirmed by IVUS.
Conclusions: This pilot study for the use of OCT in left main stenting showed that this technique is highly feasible in this situation. Our results suggest that OCT may be more accurate than IVUS for dissection and malapposition diagnosis.

TCT-308

Intravascular Ultrasound Guided Everolimus Eluting Stent Implantation Resolves The Disadvantage Of Thin-Strut Cobalt Chromium Platform In Diabetes; Comparison Of Three Different Type Platform Stents

Hachidai Takahashi[1], Shinichiro Yamada[1], Takatoshi Hayashi[1], Yoshinori Yasaka[1], Akira Shimane[1], Seiichi Kobayashi[1], Tomofumi Takaya[1], Naoki Miyoshi[1], Kiminobu Yokoi[1], Shogo Oishi[1], Takayoshi Toba[1]
[1]Himeji Cardiovascular Center, Himeji, Hyogo, Japan

Background: Though efficacy of everolimus-eluting stent (EES; Xience V) is well-established by many clinical evidences, several trials failed to show superiority in diabetic subset. We hypothesized that inappropriate stent expansion in complex lesion of diabetes due to thin cobalt chromium platform may be one of the reasons. The purpose of this study is to investigate this hypothesis using intravascular ultrasound (IVUS).
Methods: 183 de novo lesions (62 EES, 69 paclitaxel-eluting stent (PES; Taxus Express2, thick stainless platform) and 52 biolimus-eluting stent (BES; Nobori, thick stainless platform with open cell design)) treated by elective IVUS-guided PCI for stable patients were recruited in this study. Stent size was determined according to pre-procedural IVUS findings. After stent deployment, IVUS procedure was repeated and stent diameter and cross-sectional area (CSA) were measured. If stent expansion was inadequate, post dilation was performed using short-length high pressure balloon and again IVUS was performed. IVUS findings were then compared with estimated diameter and CSA calculated from each stent compliance chart.
Results: In EES, there were significant differences of stent expansion and symmetry index between diabetic and non-diabetic just after stenting. These differences were not observed in thick stainless platform PES and BES though stent designs were different between two stents. According to IVUS, 68% of diabetic cases in EES group required post balloon dilatation to obtain optimal stent expansion. After post dilatation, difference between diabetic and non-diabetic disappeared in EES.
Conclusions: In EES, asymmetrical stent underexpansion was observed in diabetic patient after stent deployment, however, IVUS-guided post-dilatation overcome this disadvantage. IVUS-guided EES implantation can improve clinical outcome in patients with diabetes.

	(N=61)			PES (N=69)			BES (N=52)		
IVUS findings	DM (N=24)	Non-DM (N=37)	p	DM (N=31)	Non-DM (N=38)	P	DM (N=24)	Non-DM (N=28)	P
	just after stent implantation								
Minimum/ Estimated stent diameter (mm)	0.715	0.776	0.002	0.757	0.776	0.34	0.800	0.817	0.38
Minimum/ Estimated CSA(mm^2)	0.633	0.700	0.019	0.680	0.722	0.13	0.744	0.758	0.64
Symmetry index	0.802	0.855	0.007	0.842	0.835	0.72	0.856	0.876	0.24
	final								
Minimum/ Estimated stent diameter (mm)	0.794	0.807	0.52	0.835	0.823	0.56	0.829	0.832	0.90
Minimum/ Estimated CSA(mm^2)	0.735	0.748	0.61	0.799	0.786	0.69	0.791	0.78	0.71
Symmetry index	0.842	0.864	0.21	0.866	0.859	0.66	0.868	0.876	0.65

POSTERS