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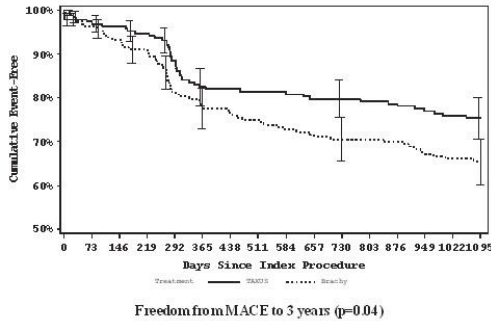
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estimated rates of cardiac death (2.8% PES vs 2.2% VBT, $P=0.76$), myocardial infarction (4.2% PES vs 7.6% VBT, $P=0.20$) or target vessel thrombosis (2.7% PES vs 4.3% VBT, $P=0.40$) were observed at 3 years. The significant decrease in MACE (cardiac death, MI or TVR) with PES (24.7%) over VBT (34.5%, $P=0.04$) appears driven primarily by a progressive relative reduction in TVR throughout follow-up (Figure). **Conclusion:** The treatment of BMS ISR using PES rather than VBT improves event free survival through 3 years, with benefits improving over time due to reduced late catch-up.



9:30 a.m.

2501-535 "Late catch-up" in Restenosis Following Sirolimus-Eluting Stent Implantation

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Background: Despite the suppression of intimal hyperplasia (IH) in coronary arteries with drug eluting stents (DES) compared with bare-metal stents at 6 months postprocedure, there appears to be a "late catch-up" in IH growth among patients treated with DES after 1 year. However, late restenosis after sirolimus-eluting stent (SES) implantation has not been sufficiently evaluated. The aim of our study was to determine whether in-stent restenosis (ISR) occurring >1 year after SES implantation is a real clinical entity.

Methods: We analyzed data on all SES implanted in patients treated from June 2004 to April 2007 and evaluated the incidence, clinical presentation, and angiographic ISR pattern after SES implantation. "Late catch-up" required demonstration of a patent stent at 6 to 9 months, with restenosis demonstrated on repeat angiography after 1 year.

Results: There were 3,420 lesions in 2,414 patients treated with SES over the length of the study period at our institution. Of this population, angiographic follow-up was performed in 1,763 patients (73.0%) with 2,506 lesions (73.3%). Angiography was performed after 1 year because of patient symptoms or to treat other vessels. Overall, ISR occurred in 265 lesions (10.6%). "Late catch-up" in ISR was observed in 20 lesions (0.80%) at second angiographic follow-up (median 23.5 months; range of 17.7 to 29.3 months). Of 20 lesions, 13 (65%) were located at the stent edge. Almost all cases of "late catch-up" (92.8%) expressed a focal angiographic ISR pattern. Clinical presentation of late target lesion revascularization (TLR) included silent ischemia (43%) and recurrent angina (57%). Late TLR was performed in 18 patients with 19 lesions. Serial quantitative coronary angiographic analysis of these lesions showed a minimal lumen diameter of 2.71 ± 0.55 mm immediately after SES implantation, 2.44 ± 0.59 mm at 9-month follow-up, and 1.04 ± 0.26 mm at second follow up ($p < 0.001$).

Conclusions: "Late catch-up" is an infrequent but real entity. The clinical presentation of late TLR was either silent ischemia or recurrent angina, but not acute coronary syndrome. Careful clinical and angiographic follow-up 1 year after SES implantation should be considered.

9:30 a.m.

2501-536 Intravascular Ultrasound Analysis of Vessel Response in Acute Coronary Syndrome Treated with Zotarolimus-Eluting Stents

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Background: First-generation drug-eluting stents demonstrated conflicting results in the treatment of acute coronary syndrome (ACS). The aim of this IVUS study was to elucidate detailed vessel response to Endeavor zotarolimus-eluting stents (ZES) in patients with ACS versus stable angina.

Methods: We analyzed serial (baseline and 8-9 month follow-up) volumetric IVUS in 297 patients treated with a ZES for *de novo* coronary lesions. Volume index (volume/length) was calculated for vessel (VVI), plaque (PVI), neointima (NIV), and lumen (LVI). Percent neointimal volume (%NIV) was calculated as $(NIV/SVI) \times 100$. Cross-sectional narrowing (CSN) was defined as neointimal area divided by stent area (%).

Results: Despite larger VVI, PVI, and SVI in ACS patients, %NIV and max CSN at follow-up were similar among groups with stable angina (SA, $n=142$), unstable angina (UA, $n=125$), and recent myocardial infarction (MI, $n=30$) (Table). The rate of significant narrowing (maximum %CSN >50%) was also comparable among the 3 groups. With adjustment for difference in baseline characteristics by multiple regression analysis, ACS

(UA and MI) showed no significant correlation with %NIV ($\beta=0.044$, $P=0.702$) or max CSN ($\beta=0.094$, $P=0.382$). The incidence of late acquired incomplete stent apposition (ISA) was also similar among the 3 groups.

Conclusion: The efficacy of ZES in patients with ACS on neointimal hyperplasia appears to be comparable to those with stable angina.

	Stable AP	Unstable AP	AMI	P value
Baseline (BL)				
VVI (mm3/mm)	12.9±4.1	14.4±3.6	16.6±5.0	0.001
PVI (mm3/mm)	6.3±2.7	7.1±2.4	8.6±3.1	0.004
LVI (mm3/mm)	6.7±1.9	7.3±2	7.7±2.3	0.022
Follow-up (FU)				
VVI (mm3/mm)	13.2±4.1	14.9±3.6	15.8±4.8	0.002
Delta-VVI (mm3/mm)	0.203±1.027	0.174±1.18	-0.276±1.208	0.279
PVI (mm3/mm)	6.5±2.5	7.4±2.3	8.2±3.3	0.006
Delta-PVI (mm3/mm)	0.163±0.932	0.119±0.935	-0.159±0.671	0.436
LVI (mm3/mm)	5.7±1.9	6.0±1.8	6.6±1.8	0.032
Delta-LVI (mm3/mm)	-1.007±1.007	-1.351±1.054	-1.216±1.362	0.066
% NIV (%)	16.9±11.8	18.9±10.7	16.6±9.5	0.292
% Max CSN (%)	31.7±14.9	35.4±14.9	34.0±16.5	0.135
Patients with Max CSN >=50% (%)	12.0	15.2	16.7	0.666
Late acquired ISA (%)	1.5	0	0	0.322

9:30 a.m.

2501-537 Six-Month Clinical Outcomes of Sirolimus-Eluting Stents with a Biodegradable Polymer for the Treatment of Unselected Patients with Complex Coronary Lesions - Preliminary Results from the Prospective, Multicenter E-Series Registry

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Background: The Supralimus sirolimus-eluting stent, S-SES (Sahajanand Medical Technologies Pvt. Ltd., Surat, India), is a new DES technology incorporating a biodegradable drug-carrier component. Preliminary data with the S-SES has shown promising results, however, its impact in unselected pts is still unknown.

Methods: Between Nov/2006-Sep/2008, 1,045 pts were prospectively enrolled in 35 sites in South America. Inclusion criteria were all comers for routine or emergency PCI. Clinical follow-up was scheduled at 1, 6, 12, and 24 months. We report the preliminary outcomes at 6-month.

Results: Baseline characteristics included mean age 64 years, 32% female, 79% hypertension, 40% diabetes, 32% smoking, 23% previous MI, and 35% previous PCI. Overall, 37% presented with ACS (5% AMI). Lesion morphology included 29% mod/severe calcium, 16% in-stent restenosis, 12% bifurcation, 6% total occlusion, 5% ostial, 4% thrombus, and 63% classified as type B2/C. LAD was the predominant location (43%); glycoprotein inhibitors were used in 11%, there were 1.03 lesions per patient, and final TIMI 3 flow was achieved in 97%. Baseline reference diameter and lesion length were 2.92 and 23.26 mm, respectively. Clinical outcomes are shown in the Table.

Conclusions: The novel S-SES DES with a biodegradable polymer demonstrated excellent results in unselected pts with complex lesions. In the mid-term FU, there were only 2% TLR, and no safety concerns including stent thrombosis <1%. Longer-term follow-up is warranted.

Outcome	In-hospital	6-month (Out-of-hospital)
Death (all cause)	0.3%	2.1%
MI	1.7%	1.2%
TLR	0.1%	2.2%
Stent thrombosis	0%	0.8%

9:30 a.m.

2501-538 The Initial Extent of Incomplete Stent Apposition in ST-Elevation Myocardial Infarction Treated with Drug-Eluting Stent: The Usefulness of Optical Coherence Tomography

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Background: The aim is to identify the extent of initial incomplete stent apposition (ISA) using optical coherence tomography (OCT) in ST-elevation myocardial infarctions (STEMI) treated with different types of drug-eluting stents (DES) and to compare the results.

Methods: Twenty four STEMI patients underwent primary percutaneous coronary intervention (PCI) were enrolled. The OCT was performed within 72 hours after the primary PCI. Distances between the endo-luminal surface of the strut reflection and the vessel wall and the extent of ISA were measured and analyzed.

Results: Sirolimus-eluting stents (SES), paclitaxel-eluting stents (PES) and zotarolimus-eluting stents (ZES) were deployed in 7 patients (29%), 7 patients (29%) and 10 patients (42%). In total, 4951 struts in 620 mm single-stent segments were analyzed. 1463 struts in SES, 1522 in PES, and 1966 in ZES were analyzed and measured distances were found to be significantly different (134 ± 48 μ m in SES, 89 ± 29 μ m in PES and 76 ± 26 μ m in ZES, $p=0.001$) and the frequency of ISA were also significantly different (28% in SES, 11% in PES, 10% in ZES, $p=0.001$).