ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT innovation in intervention

E332
JACC March 27, 2012
Volume 59, Issue 13

ACC-i2 with TCT

LONG TERM QUANTITATIVE CORONARY ANGIOGRAPHIC ASSESSMENT OF SIROLIMUS ELUTING STENTS IN VERY LATE TARGET LESION REVASCULARIZATION

i2 Oral Contributions
McCormick Place South, S103c
Sunday, March 25, 2012, 11:30 a.m.-11:40 a.m.

Session Title: Prevention and Treatement of Restenosis
Abstract Category: 16. PCI - DES (clinical/outcomes)
Presentation Number: 2509-11

Authors: *David Anthony Burke, Alexandra Almonacid, Jeffrey Popma, Beth Israel Deaconess Medical Center, Boston, MA, USA*

Background: Sirolimus-eluting stents (SES) show reduced target vessel failure and decreased frequency of TLR compared with bare-metal counterparts. This analysis evaluates angiographic profiles of patients receiving SES who undergo late (>1 year) TLR.

Methods: With SIRIUS Trial outcome data available to seven years, a post hoc analysis was performed on QCA data from the Angiographic Core Lab in patients requiring TLR after one year following index procedure with SES.

Results: Between one and seven years, 34 patients (6.4%) with SES required TLR (BMS 5.7%, n=30), with events distributed evenly across the 6 year period. (Cumulative 7 year TLR rates were 12.2% SES vs 26.5% BMS). A statistically significant difference is seen comparing percentage diameter stenosis (% DS) and MLD in the 'in-stent' and 'in-lesion' segments of SES group immediately post PCI (both p<0.0001). This discrepancy between the disease within the stent and that at stent edge persists at all time-points, and at time of TLR a similar difference is seen comparing the % DS in the 'in-stent' and 'in-lesion' segments (48+/-33.8% vs 69.4+/-22.35%, p<0.0001). 44.6% (n=29) of SES group have type 1B in-stent restenosis (focal stent edge).

Conclusions: Intimal hyperplasia within the stent is an uncommon cause of late restenosis, and a stent edge discrepancy that arises immediately following stent deployment persists at all time-points. Restenosis at stent edge subsequently leads to TLR requirement, and this risk persists over long-term follow-up.

SES GROUP LATE TLR (> 1 YEAR)	'In-stent'	'In-lesion'	P value
Post-PCI			
% DS	**4.60 +/- 5.82**	**15.05 +/- 8.51**	**<0.0001**
MLD	2.51 +/- 0.35	2.25 +/- 0.42	<0.0001
8 month follow-up			
% DS	**16.52 +/- 20.98**	**22.83 +/- 18.36**	**=0.0001**
MLD	2.23 +/- 0.67	2.06 +/- 0.59	=0.0002
Time of TLR			
% DS	**48.00 +/- 33.81**	**69.44 +/- 22.35**	**<0.0001**
MLD	1.40 +/- 0.93	0.81 +/- 0.59	=0.0001
Late loss			
Baseline to FU	0.27 +/- 0.55	0.18 +/- 0.56	=0.115
FU to TLR	0.91 +/- 0.91	1.43 +/- 0.68	=0.004
Baseline to TLR (no FU)	1.60 +/- 1.10	1.57 +/- 0.93	=0.89

TLR	< 1 year	1-2yrs	2-3yrs	3-4yrs	4-5yrs	5-6yrs	6-7yrs
SES	31	4	7	6	8	7	2
Cumulative		35	42	48	56	63	65
BMS	109	5	10	4	3	6	2
Cumulative		114	124	128	131	137	139

QCA data is % or mean +/- standard deviation.
p values calculated using paired student t test.
Abbreviations: TLR=target lesion revascularization; PCI=percutaneous coronary intervention; %DS=percentage diameter stenosis; MLD=minimum luminal diameter; FU=follow up; SES=Sirolimus-eluting stent; QCA=quantitative coronary angiography