1059-135 Coronary Bypass Grafts: Assessment of Critical 3-D Anatomic Features

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Coronary arteriography yields 2-D projection images of bypass grafts. Advances in interventional therapy require increasingly complex, quantitative information especially in the era of stent deployment. To quantify these parameters we applied 3-D reconstruction techniques that only require two standard angiographic views of the vessel to be reconstructed. A total of 36 grafts were reconstructed and total graft length and degree of tortuosity (the average tangent angle relative to a straight line as one travels down the graft) were derived.

Results: Saphenous vein grafts (SVG) were 11.2 ± 3.5 cm in length for all locations; SVG-LAD were shortest (n = 8: 8.4 ± 1.9 cm) and SVG-RCA (n = 11: 12.2 ± 2.5 cm) and SVG-Circ (n = 13: 12.1 ± 4.4 cm) were longer ($p < 0.005$). In vivo accuracy studies using a PTCA wire with 15 mm markers showed a 2% error in length measurement by 3-D (i.e. 2 mm in a 10 cm graft). Tortuosity averaged 34 ± 10 degrees for all SVG: SVG-LAD being least (29 ± 9 degrees) and SVG-RCA the most tortuous (42 ± 8 degrees, $p < 0.005$). Internal mammary grafts (n = 4) were even longer and more tortuous.

Conclusions: 3-D reconstruction of bypass grafts yields important patient-specific information (length, tortuosity, and views that minimize foreshortening) which assist in developing an interventional strategy. Unlike intravascular ultrasound, *no graft instrumentation* is necessary with this technique.

1059-136 Post-revascularisation Coronary Disease and First Year Outcome

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The extent to which post-revascularisation coronary disease contributes to an unfavorable outcome is uncertain. The association between the extent of post-revascularisation coronary disease and first year outcome in a major revascularisation trial (CABRI) was assessed.

Methods: A number of measures of post-revascularisation coronary disease were utilized in the CABRI population. These measures were both weighted for proximal disease (Duke and Leaman) and non-weighted. They were then cross-tabulated against the first year outcomes of mortality, non-perprocedural myocardial infarction, repeat revascularisation and angina CCS grade >1.

Results: Using any of the measures of post-revascularisation coronary disease there was no association between residual disease and death or non-perprocedural myocardial infarction. However, with the Duke measure the presence of post-revascularisation coronary disease was associated with a relative risk (RR) of repeat revascularisation of 2.0 (95% Confidence Interval 1.52–2.63) and relative risk of angina CCS grade >1 of 1.86 (95% CI 1.32–2.64). Using the Leaman measure the respective values were RR = 1.97 (95% CI 1.47–2.59) for repeat revascularisation and RR = 1.88 (1.33–2.66) for angina CCS >1.

Conclusion: In the first year analysis of the CABRI population shows that post-revascularisation coronary disease was associated with both a greater need for repeat revascularisation and a poorer angina status, but not death or myocardial infarction. The association was strongest with proximal post-revascularisation coronary disease.

1060 Stent Restenosis: Mechanisms, Prevention, Treatment

Monday, March 30, 1998, 3:00 p.m.–5:00 p.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 3:00 p.m.–4:00 p.m.

1060-77 Influence of Routine Angiographic Follow-up on Clinical Restenosis Outcome in the ASCENT Trial

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ASCENT is a randomized trial comparing the ACS MULTI-LINK (ML) stent to the Palmaz-Schatz (PS) stent for the primary endpoint of clinical target vessel failure, defined as death, MI, or target vessel revascularization (TVR). While it is generally believed that TVR is independent of late angiography, ASCENT assigned 538 patients to routine 9 month angiographic follow-up (A), and the remaining 502 patients (C) to clinical follow-up (repeat angiography recommended only for recurrent angina or functional evidence of ischemia). The influence of routine angiographic follow-up on TVR (Table), is broken down by A vs. C follow-up and by those with (I+) and without (I-) clinical evidence of ischemia.

Group	Overall	I+	I-
A	85/538 (15.8)	65/268 (24.2)	20/270 (7.4)
C	50/502 (10.0)	43/232 (18.5)	7/270 (2.6)

$p = 0.005$ for overall A vs. C, $p = 0.02$ for I+ A vs. C.

Conclusions: 1) Patients subjected to routine angiographic follow-up have a higher incidence of TVR. 2) The increased TVR reflects mostly revascularization in patients without clinical evidence of ischemia. 3) Studies that include routine angiographic follow-up may find elevated estimates of clinical restenosis.

1060-78 Effects of Cilostazol on Restenosis After Palmaz-Schatz Coronary Stent Implantation

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Background: Cilostazol inhibits intimal hyperplasia after stent implantation in canine iliac arteries.

Methods: To determine whether this agent prevents angiographic restenosis after stent implantation, we randomly gave cilostazol (200 mg/day) or ticlopidine (200 mg/day) at least for 3 months after the Palmaz-Schatz stent implantation in 89 patients. Complete angiographic data have been obtained in 76 patients. Minimal luminal diameters were determined by an edge-detection method at baseline (pre MLD), after intervention (post MLD), and at 6-month follow-up (fu MLD).

Results: One patient tereated with ticlopidine had subacute thrombosis, but none with cilostazol.

(mean ± S.D.)	Cilostazol	Ticlopidine	p
No. of lesions	47	44	
reference (mm)	2.90 ± 0.51	3.10 ± 0.44	n.s.
pre MLD (mm)	0.78 ± 0.44	0.96 ± 0.38	0.04
post MLD (mm)	2.28 ± 0.37	2.38 ± 0.39	n.s.
fu MLD (mm)	1.88 ± 0.46	1.64 ± 0.51	0.03
late loss (mm)	0.40 ± 0.38	0.74 ± 0.59	<0.005
loss index	0.27 ± 0.10	0.51 ± 0.14	<0.005
restenosis rate	19%	33%	n.s.

Conclusions: These results suggest that cilostazol may be effective to prevent restenosis after stent implantation.

1060-79 Risk Factor Analysis for the Development of Restenosis After Intracoronary Stent Implantation With Adjunct High Pressure Stent Dilatation

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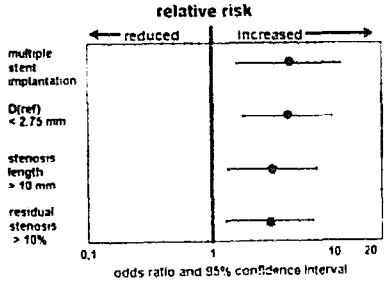
Aim of this study was to detect the impact of high pressure stent dilatation (HPSD) on the development of stent restenosis and to define risk factors. Group 1 constituted of 130 patients (pts), in whom 166 Palmaz Schatz (PS) stents were implanted without HPSD. For comparison, group 2 constituted of 150 pts in whom 249 PS stents were implanted with HPSD (≥16 atm). Univariate risk factor analysis was performed by calculation of odds ratios and 95% confidence intervals. Stepwise logistic regression analysis was used to define independent risk factors. Both groups were comparable with respect to their baseline parameters, except that in group 2 longer lesions (9.9 ± 2.2 mm versus 7.8 ± 1.6 mm; $p < 0.001$) were treated in larger vessels (3.12 ± 0.43 mm versus 3.02 ± 0.40 mm; $p < 0.01$). Restenosis rate (>50% diameter stenosis at follow-up) was 24% in group 1 and 18% in group 2. Out of 42 anamnestic, procedural and angiographic parameters the following were identified as risk factors:

Group 1



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