Background: Multiple prior episodes of in-stent restenosis (ISR) is a risk factor for subsequent recurrence after PTCA or stenting. However, whether the number of prior target lesion ISR adversely affects the clinical success of brachytherapy for ISR is unknown. Method: SCRIPPS III is a 500 patient multicenter registry utilizing localized (n-192) gamma brachytherapy for ISR. Pts in SCRIPPS III were divided into 3 groups according to the number of prior interventions to the target lesion: 1 prior PCI (n=211); 2 prior PCIs (n=179); and ≥3 prior PCIs (n=86). Procedural and 6 month clinical outcomes were examined. Results: There were no significant differences in baseline patient and lesion characteristics, procedural outcomes and in-hospital results between the 3 groups. There was no significant difference in the average seed length between the groups. There were no episodes of late stent thrombosis beyond 30 days.

Conclusions: The classical negative relation between vessel size and late lumen loss was seen in the US group, but not in the SES group. SES prevents neointimal growth and late lumen loss irrespective of the vessel size.

The Absence of Edge Effect After Implantation of Sirolimus-Eluting Stents to Treat In-Stent Restenosis: A Three-Dimensional Intravascular Ultrasound Volumetric Analysis

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Background: "Edge effect" has become an important issue in assessing new technologies for inhibiting restenosis (i.e. brachytherapy). We sought to determine whether there is an "edge effect" after implanting Sirolimus-eluting (SE) BX velocity stents to treat in-stent restenosis (ISR).

Methods: Forty patients with ISR in native coronary arteries were treated with one or two 18mm SE stents (mean stent length 23.3±7.1 mm). Serial volumetric intravascular ultrasound (IVUS) measurements were obtained at baseline and 4 months, including the 10mm long reference segments adjacent to the proximal and distal edges of the stent. Volumes were normalized for the lengths of the reference segments, and mean areas are reported (Table). Results: In the 22 pts that underwent 4-month angiographic and IVUS follow-up, there was no recurrence either within the stent or at the stent edges. At follow-up, IVUS in-stent intimal hyperplasia volume measured 6.3±5.6mm³, occupying only 5% of the stent volume. Serial IVUS analysis showed neither positive nor negative arterial remodeling, no increase in proximal or distal edge plaque, and no changes in edge lumen dimensions.

Conclusion: This preliminary registry using the Sirolimus-eluting stent to treat in-stent restenosis demonstrates the beneficial antiproliferative effects of Sirolimus in eliminating in-stent neointima formation while preserving peri-stent vessel dimensions without detrimental "edge effects".

Safety and Performance of a Paclitaxel-Eluting Stent for the Treatment of In-Stent Restenosis: Preliminary Results of the Taxus III Trial

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Background: The success of coronary stenting for atherosclerotic coronary artery disease has been limited by in-stent restenosis (ISR). The use of polymer-controlled delivery of the anti-metabolic agent Paclitaxel has been under investigation for the treatment of de novo coronary lesions. Taxus III was designed as a two-center registry to determine the feasibility of using this technology for the treatment of ISR.

Methods: Patients with stable angina, unstable angina with documented ischemia, or silent ischemia with angiographically defined ISR, were enrolled. Acceptable lesions for the Treatment of In-Stent Restenosis Irrespective of the Vessel Size: A Subanalysis of the Multicenter RAVEL Trial


Introduction: Vessel size is an established predictor of angiographic outcome after catheter-based intervention. Neointimal growth is a uniform vascular reaction to vessel injury. Small vessels tend to have relatively more neointimal hyperplasia than larger vessels. Also: To investigate the relationship between vessel size and late lumen loss after implantation of Sirolimus-eluting stents.

Methods: We analyzed the angiographic outcome of patients, who were prospectively included in the multicenter RAVEL trial. Patients with de-novo lesions were randomized to receive an 18mm Sirolimus-eluting Bx VELOCITY™ stent (SES) ( Cordis) or a uncoated 18mm Bx VELOCITY™ (US) stent. Quantitative coronary analysis was performed at baseline and at 6-month follow-up (fup). Vessels were stratified in terciles according to their diameter (RD). Late lumen loss (LL) was calculated as "MLD post procedure (post) - MLD fup".

Results: