Intracoronary Beta-Irradiation 24 Hours After Percutaneous Coronary Interventions: A Serial Volumetric Intravascular Ultrasound Study

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Background: Local irradiation by intravascular brachytherapy (IVBT) immediately after percutaneous coronary intervention (PCI) has been used for the prevention of restenosis. Whether a longer time interval between PCI and IVBT is equally effective is not yet known. In this single center study we compared prompt vs delayed brachytherapy after PCI.

Methods: A total of 30 de novo lesions at high risk for restenosis were treated successfully with stenting followed by prompt (immediately after PCI, n=15) or delayed (24 hours later, n=15) intracoronary beta-irradiation (Sr90/90m, Novoste Beta-Cath™). The pre- and post-intervention IVUS was performed at the index procedure and 6 months later. IVUS measurements included stent, lumen and intima hyperplasia cross-sectional areas (CSA) every 1 mm of stent length and mean values were calculated. Minimum lumen CSA was determined. Results: Baseline, clinical and IVUS characteristics were similar in the two groups. At 6-months, there was no difference in the mean intimal hyperplasia CSA change from baseline between the groups; prompt 0.5±0.7 vs delayed 0.8±0.8 mm2, p=0.186. Similarly, no difference was observed in the changes of the other measured parameters. These results indicated that intracoronary beta-irradiation is equally effective whether performed immediately after PCI or 24 hours later.

Poster Session

1100 Newer Imaging Techniques and Devices for Peripheral Interventions

Monday, March 31, 2003, Noon-2:00 p.m.
McCormick Place, Hall A
Presentation Hour: Noon-1:00 p.m.

1100-197 Renal Artery Stenting Using Gadolinium-Based Arteriography in Patients With Baseline Renal Insufficiency

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Background: Contrast-induced nephropathy (CIN) may complicate renal artery stenting (RAS) procedures in patients with baseline elevated creatinine (Creat) levels. Non-iodinated Gadolinium (GAD) based contrast has been proposed as an alternative agent that may reduce the incidence of CIN; however, the clinical efficacy of GAD has not been adequately investigated. Methods: Between 1999 and present, we employed GAD based arteriography in 20 patients (25 renal arteries) with significant baseline renal insufficiency (Creat >2.0 mg/dl) undergoing RAS. Baseline Creat levels were compared to post-procedure and long-term follow-up levels. Results: Procedural success was 100%. An average of 70 cc of GAD contrast was used per case. Four patients received an additional 25 cc of iodinated contrast due to poor image quality with GAD only. Over a mean 7-month follow-up period there were two deaths (10%) including one patient who required dialysis prior to expiring. There was no significant change in Creat levels post-procedure compared to baseline. At long-term follow-up, Creat levels were significantly lower compared to baseline (Table). Conclusion: Gadolinium based arteriography can be safely and effectively used during RAS in patients with baseline renal insufficiency. These techniques may enhance the renal protective effect of RAS in this high risk population with renal artery stenosis.