Brachotherapy: Special Considerations for In-Stent Restenosis

Tuesday, March 19, 2002, 3:00 p.m.-5:00 p.m.
Georgia World Congress Center, Hall G
Presentation Hour: 3:00 p.m.-4:00 p.m.

The Impact of New Stent Implantation on Outcomes Following Intracoronary Brachytherapy

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Background: Late stent thrombosis has been correlated with new stent placement at the time of intracoronary brachytherapy. The Scripps III study tests a strategy of extended anti-platelet therapy and reduced stent deployment to reduce late thrombosis. The objective of this analysis is to evaluate outcomes in patients treated with new stent placement at the time of intracoronary gamma radiation compared with patients who did not receive new stents.

Methods: At two centers (Scripps Clinic and Lenox Hill), vigorous attempts were made to avoid implanting new stents at the time of intracoronary gamma radiation. Patients who did not receive new stents were discharged on clopidogrel (75mg per day after a 300mg loading dose) for 9 months. Patients who received new stents were treated with clopidogrel for 12 months. All patients were treated with aspirin indefinitely.

Results: Of 500 patients enrolled, 112 (22.4%) received new stents (New Stent) and 388 (77.6%) did not (No New Stent). Mean follow up time was 337±24 days. New Stent patients had an increase in major adverse cardiac events (death, myocardial infarction or target lesion revascularization) compared to No New Stent patients (29.0% vs. 16.7%, p=0.007). New Stent patients had a higher incidence of myocardial infarction compared to No New Stent patients (12.1% vs. 2.5%, p<0.001). Three patients in New Stent group sustained stent thrombosis within the first 30 days versus none in the No New Stent group (2.8% vs. 0.0%, p=0.01). No patient had stent thrombosis after 30 days in either group. There was a higher incidence of target lesion revascularization in New Stent patients (22.4% vs. 13.7%, p=0.05) and a marked increase in revascularization due to margin restenosis (16.8% vs 9.1%, p=0.03). New Stent patients had an increase in major adverse cardiac events (death, MI, subacute stent thrombosis, TLR).

Conclusion: Additional stent deployment at the time of intracoronary gamma radiation results in an increase in major adverse cardiac events. During brachytherapy procedures, vigorous attempts should be made to avoid new stent placement. If new stents must be placed, particular care should be taken to avoid injuring margin margins not adequately treated by the radiation source.