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Clinical Cardiology: Laser Coronary Angioplasty

Thursday Morning

Coronary Excimer Laser Angioplasty: Results in 223 Patients from a Multicenter Registry

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We present the acute results of coronary excimer laser angioplasty (ELA) performed in an expanding multicenter study in 223 consecutive, symptomatic patients: 5% Class I, 12% Class II, 37% Class III, and 46% Class IV. A self-calibrating XeCl laser (308 nm) was coupled to 1.5, 1.8, or the recently introduced 2.1-mm multifiber catheters to treat 245 stenoses (138 LAD, 63 RCA, 30 LCx, 14 SVG) with the following laser parameters: 120 ns pulsewidth, 25-40 Hz, and fluence increased from 30 to 50-60 mJ/mm². Adjunctive balloon angioplasty was used in 221 stenoses when the residual stenosis after laser was >30-50%. Success with ELA (reduction in stenosis severity by >20%) was achieved at 192/245 (78%) treated sites, with subsequent balloon angioplasty success (<50% residual stenosis and no complication) at 223/245 lesions (91%). Complications were no greater than that for conventional angioplasty: in-hospital death (1.4%), non-Q MI (3.6%), emergency bypass surgery (3.1%), perforation (1.4%), dissection (8.9%), embolization (0.9%), and abrupt closure (2.4%).

The results from this enlarging multicenter trial, using improved laser parameters and catheters, demonstrate safety and efficacy of coronary ELA that is comparable to that obtained with conventional balloon angioplasty.