**Adjunctive use of Coronary Excimer Laser for lesions unsuccessfully crossed with coronary balloons**

A. Singh, **G. Srinivas**, S. Singhal, D. Jauhar, B. Kaplan, R. Jauhar, B. Arkonac

Long Island Jewish Medical Center, New Hyde Park, NY, USA

Objective:To investigate the utility of laser in otherwise failed percutaneous coronary interventions (PCI)

Background: Failure to cross lesions with balloon is a well-recognized reason for procedural failure. We report our institution experience with the Coronary ELCA laser system for lesions crossed with a coronary wire but unsuccessful attempts at passing balloon.

Method: This is a retrospective audit of all PCI at a single center. Failure to pass the balloon was defined by successful wiring of the lesion and inability to pass 1.5-2.0 balloon. Angiographic success was defined as <50% residual stenosis. Primary safety end points considered were vessel dissection with no flow, tamponade and MACE (death, MI, stroke).

Results: Out of 4832 PCIs performed, we identified 56 cases where operator experienced repeated unsuccessful attempts at passing the balloon across lesions. Use of coronary laser resulted in successful angioplasty in 46 of the 56 cases (80%). There was one case of no reflow and 3(5%) patients had peri-procedural MI.

Conclusions: Coronary laser is an effective and safe adjunctive technique for treatment of complex coronary lesions that otherwise are not crossed with balloons. These otherwise “failed PCIs” can be successfully and safely completed with use of laser complementary with PCI techniques.

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|  | Pre-PCI | Post-PCI |
| % Lesion Stenosis, Mean (SD) | 94 (14) | 22(37) |
| % Lesion Stenosis by severity (n)  <50%  50-70%  70-99%  100% | 0  0  36 (64%)  20 (36%) | 46 (82%)  0  5 (9%)  5 (9%) |
| TIMI Flow (n)  TIMI-0  TIMI-1  TIMI-2  TIMI-3 | 17 (30%)  5 (9%)  10 (18%)  24 (43%) | 6(12%)  3 (5%)  3 (5%)  43 (80%) |
| MLD (mm), Mean (SD) |  | 2.7 (0.4) |