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Does Incremental Lumen Gain with Intravascular Ultrasound-Guided Stenting have an Impact on the Probability of Angiographic Restenosis?

Issam Moussa, Centro Cuore Columbus, Milan Italy; Nicola Corvasa, Lenox Hill Hospital, New York, NY; Jonathan Tobis, University of California, Orange, CA; Jeffrey W Moses, Michael Collins, Lenox Hill Hospital, New York, NY

We studied 479 lesions that had IVUS guided stenting using the Palmaz-Schatz stent. Angiographically successful stenting was achieved in all lesions followed by IVUS which led to

balloon upsizing and/or higher inflation pressure followed by final IVUS. Instant minimum lumen cross sectional area (MLCSA) increased from $6.76 \pm 2.25 \text{ mm}^2$ to $8.47 \pm 2.62 \text{ mm}^2$ ($p < 0.001$). Incremental lumen gain was calculated as the MLCSA documented on the final IVUS - MLCSA documented on the initial IVUS (mean $1.72 \pm 1.79 \text{ mm}^2$). Angiographic follow-up was performed in 359/479 lesions (75%) at 5.1 ± 2.1 month. Angiographic restenosis (defined by $>50\%$ DS) occurred in 75/359 lesions (21%). The effect of lumen gain on the probability of freedom from

restenosis is shown in the figure below using simple logistic regression and the probability of restenosis was calculated for different degrees of lumen gain using inverse prediction (table). Conclusions: 1) IVUS imaging after high pressure stent implantation provides data that result in lumen gain beyond what was achieved with angiographic optimization. 2) The probability of restenosis is decreased according to the degree of lumen gain achieved as a result of IVUS interrogation.

