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The Impact of Preintervention Plaque Area Determined by Intravascular Ultrasound on Luminal Renarrowing Following Coronary Stenting.

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The aim of this study was to determine the impact of preintervention plaque area (PA) on lumen renarrowing post stenting. We studied 108 consecutive pts who had preintervention intravascular ultrasound (IVUS) followed by successful stenting. In 78 pts (81 lesions) the PA was measurable and a late angiographic FU at 4.9 ± 1.7 mo was available. Lesions were divided into two groups based on preintervention % PA (plaque area/vessel area): group I (Gr.I) with %PA < 0.60 (n=11) and group II (Gr. II) with %PA ≥ 0.60 (n=70). There was no difference between groups in angiographic reference diameter and lesion length, but Gr.I had a trend towards smaller IVUS vessel CSA (10.16 ± 2.87 mm² vs 12.16 ± 4.17 mm², p=0.15). Gr.I and II had similar post-procedure angiographic minimal lumen diameter (2.97 ± 0.48 mm vs 3.05 ± 0.43 mm, p=ns) and IVUS minimum lumen CSA (7.34 ± 1.12 mm² vs 7.08 ± 2.51 mm², p=ns). At FU, Gr.I had lower mean % diameter stenosis (DS) ($14 \pm 32\%$ vs $37 \pm 31\%$, p=0.03) with a trend towards lower restenosis (10% vs 37%, p=0.15), using $> 50\%$ DS criterion. Post-procedure relative gain was similar in groups I and II (0.56 ± 0.29 vs 0.62 ± 0.20 , p=0.5), but Gr.II had higher relative loss (0.40 ± 0.32 vs 0.13 ± 0.24 , p=0.03) and a trend towards lower net gain (0.21 ± 0.33 vs 0.43 ± 0.33 , p=0.10) at FU, as shown in the figure below. In conclusion, despite similar immediate lumen gain, lesions with larger preintervention %PA (≥ 0.60) had a significant increase in late lumen loss and a trend towards higher restenosis post stenting.

