THE REMODELING PARADOX AND CLINICAL OUTCOMES: INSIGHTS FROM PROSPECT

i2 Poster Contributions
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Background: Although positive remodeling is a known marker of plaque instability, whether remodeling in angiographically mild non-culprit lesions (NCLs) prospectively predicts MACE has not been examined.

Methods: 697 acute coronary syndrome pts were enrolled in the prospective, multicenter PROSPECT study and underwent 3-vessel grayscale and virtual histology intravascular ultrasound (VH-IVUS); but as previously reported, remodeling index (RI) as a continuous variable was not a predictor of NCL-MACE. In this study 3,223 NCLs were divided into quartiles according to RI: ≤0.85 (Q1), 0.85-0.94 (Q2), 0.94-1.00 (Q3), >1.00 (Q4).

Results: Area stenosis was greatest in Q1 [Q1 41.0 (40.0, 42.0); Q2 27.0 (26.0, 27.9); Q3 19.2 (18.2, 20.2); Q4 21.0 (20.1, 22.0), p<0.0001]. A similar pattern was observed in plaque burden, necrotic core, and dense calcium. The incidence of VH-thin cap fibroatheroma (TCFA) was also highest in Q1 (Q1 30.5%; Q2 20.7%, Q3 18.5%, Q4 19.7%, p<0.0001). Conversely, the incidence of pathological intimal thickening (PIT) was lowest in Q1 (Q1 22.6%; Q2 38.4%, Q3 44.4%, Q4 39.0%, p<0.0001). Composite cardiac events rates were most frequent in Q1 and Q4 and lowest in Q3 (Figure).

Conclusions: Two different remodeling patterns were associated with unanticipated NCL-related MACE in PROSPECT: the greatest degree of negative remodeling (which was strongly associated with greater plaque burden, smaller MLA and VH-TCFA), and the greatest degree of positive remodeling.