Abstract: P1535

Clinical impact of carotid plaque score rather than carotid intima-media thickness on atherosclerotic cardiovascular disease

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Topic(s):
Risk Factors and Prevention – Cardiovascular Risk Assessment

Citation:
Background: Carotid intima-media thickness (cIMT) assessed by ultrasound has been widely accepted as a surrogate marker of atherosclerotic cardiovascular disease. On the other hand, carotid plaque score (cPS) reflecting throughout the carotid artery plaque burden may be better marker.

Methods: We retrospectively examined 2,035 patients who underwent carotid ultrasonography between January 2006 and December 2015 at our University Hospital. Median follow-up period was 4 years. We used Cox models that adjusted for established risk factors of ASCVD, including age, gender, hypertension, diabetes, smoking, and serum lipids to assess the association of cIMT as well as cPS with major adverse cardiac events (MACE). MACE was defined as all-cause mortality or rehospitalization for a cardiovascular-related illness.

Results: During follow-up, 243 participants experienced MACE. After adjustment for established risk factors, cPS was associated with MACE (hazard ratio [HR] = 3.38 for top quintile vs. bottom quintile of cPS; 95% confidence interval [CI] 1.82 to 6.27; P-trend = 1.4×10^-8), while cIMT was not (HR = 0.88, P = 0.57). Addition of the cPS to established risk factors significantly improved risk discrimination (C-index 0.726 vs. 0.746; P = 0.017).

Conclusion: As a marker, cPS, rather than cIMT can identify 20% of individuals who are at more than threefold increased risk for MACE. Targeting diagnostic or therapeutic interventions to this subset may prove clinically useful.
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![Graph showing probability of major adverse cardiac events (MACE) over years for different quintiles of carotid plaque score (cPS).]