ELEVATED PLASMA MYELOPEROXIDASE AS INDICATOR FOR VULNERABLE PLAQUE IN STABLE PATIENTS WITH SIGNIFICANT ATHEROSCLEROTIC BURDEN

ACC Poster Contributions
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Background: Myeloperoxidase (MPO) expression is increased in ruptured atherosclerotic plaque and has been demonstrated to predict adverse clinical outcomes in the setting of acute coronary syndrome. Its relationship and relative prognostic value with other cardiac biomarkers in stable patients with significant atherosclerotic burden is uncertain.

Methods: We examined plasma MPO levels and incident major adverse cardiovascular events (MACE=death, myocardial infarction, stroke) over prospective 3-year follow-up in 2,618 patients without acute coronary syndrome (troponin negative) but significant (≥50%) stenosis in any coronary artery. MPO, B-type natriuretic peptide, and high-sensitivity C-reactive protein (hsCRP) were measured by Abbott Architect assays.

Results: In our cohort (age 63±11 years, 73% male, 32% with diabetes mellitus), there was only modest correlation between plasma MPO and hsCRP levels (Spearman’s r=0.2, p<0.001). At optimal cut-off of 322 pmol/L, MPO was predictive of higher 3-year MACE (Hazard Ratio [HR] 1.71, 95%CI 1.32-2.22, p<0.001). After adjusting for Framingham risk score, creatinine clearance, BNP (≥100 pg/mL), and hsCRP (≥2 mg/L), MPO ≥322 pmol/L remained independently predictive of 3-years MACE (HR 1.67; 95%CI 1.28-2.17, p<0.001).

Conclusion: Plasma MPO levels provide independent prognostic value for predicting long-term incident MACE in stable patients with significant atherosclerotic burden likely indicating underlying plaque vulnerability.