Abstract: P1227
Remnant lipoprotein is a residual risk of future cardiovascular events in patients with stable coronary artery disease and on statin LDL-cholesterol levels less than 70 mg/dl

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Topic(s):
Lipids: Drug therapy

Citation:
European Heart Journal (2019) 40 (Supplement), 683

Background: Recent guidelines recommend a target of low density lipoprotein cholesterol (LDL-C) <70 mg/dL in patients at very high risk of cardiovascular disease (CVD). However, a considerable residual risk of CVD persists despite achievement of the LDL-C goal on statin treatment.

Purpose: This study examined the predictive value of remnant lipoprotein levels for cardiovascular events (CVE) in patients with stable coronary artery disease (CAD) and LDL-C levels <70 mg/dL on statin treatment.

Methods: Serum levels of remnant lipoproteins (remnant-like lipoprotein particles cholesterol; RLP-C) were measured by an immunoseparation method in 247 consecutive patients with CAD who had on-statin LDL-C levels <70 mg/dL. All the patients were followed prospectively for a period of ≤60 months or until the occurrence of the primary composite endpoint of cardiac death, nonfatal myocardial infarction, unstable angina requiring coronary revascularization, worsening heart failure, peripheral artery diseases requiring endovascular or surgical intervention, aortic events, and ischemic stroke.

Results: During a mean follow-up period of 38 months, 33 CVEs occurred. Kaplan-Meier estimates in time-to-first-event analysis demonstrated that higher RLP-C levels (>3.9 mg/dL, determined by ROC-curve) resulted in a significantly higher probability for the primary endpoint than did lower RLP-C levels (<3.9 mg/dL) (p<0.01 by log-rank test). Stepwise multivariate Cox proportional hazard analysis showed that RLP-C was a significant predictor of the primary endpoint after adjustment for known risk factors and lipid variables including triglycerides (TG), and total apolipoprotein B (ApoB) (HR 1.62, 95% CI 1.26–2.07, p<0.01). The c-statistics showed that addition of RLP-C had a significant incremental effect on the predictive value of traditional risk factors (area under curve; traditional risk factors: 0.68 vs. traditional risk factors + RLP-C: 0.77, p=0.02). Category-free NRI and IDI demonstrated the additive value of RLP-C to the traditional risk factors plus non-high-density lipoprotein (HDL)-C and ApoB levels (NRI 0.52, p<0.01; IDI 0.06, p<0.01).

Conclusions: RLP-C levels are a residual risk factor for future CVEs in patients with CAD and on-statin LDL-C <70 mg/dL.