NIACIN REDUCES OXIDIZED PHOSPHOLIPIDS ON APOLIPOPROTEIN-B-100 (OXPL/APOB) CONTAINING LIPOPROTEINS

Poster Contributions
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Authors: Calvin Yeang, Paul Clopton, Xiaohong Yang, Joseph Witztum, Sotirios Tsimikas, UCSD, San Dieg, CA, USA

Background: Oxidized phospholipids (OxPL), present on OxLDL and Lp(a), are mediators of inflammation and cardiovascular disease (CVD) and are particularly enriched in vulnerable lesions. OxPL/apoB is an established biomarker that predicts anatomical CVD and events. Among lipoproteins, OxPL are primarily carried by Lp(a) and OxPL/apoB primarily reflects the biological activity of Lp(a). Previous studies have shown that statins, low fat diet and garlic increase OxPL/apoB, in concert with increases in Lp(a). However, changes in OxPL/apoB with Lp(a)-lowering agents are not well studied.

Methods: OxPL/apoB levels were measured in 591 patients at baseline and 24 weeks post therapy with ezetimibe/simvastatin (E/S) (10/20mg) + Niacin (N) (to 2g), N or E/S monotherapy in a randomized, double-blind trial of hypercholesterolemic patients.

Results: Niacin lowered OxPL/apoB by 17% at 24 weeks (Figure). In contrast, E/S+Niacin and E/S increased OxPL/apoB by 50% and 40.4%, respectively.

Conclusion: This study demonstrates a significant decrease in OxPL/apoB with Niacin. The effect of Niacin on OxPL/apoB, particularly in patients with elevated baseline levels, may provide insights explaining the AIM-HIGH and HPS2-THRIVE results.