FENOFIBRIC AND NICOTINIC ACID PROGRESSIVELY SUPPRESS POSTPRANDIAL TRIGLYCERIDEMIA IN STATIN-TREATED PATIENTS WITH LOW HIGH-DENSITY LIPOPROTEIN CHOLESTEROL

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Background: Postprandial triglyceridemia is an emerging risk factor for atherosclerosis. It is mitigated by statins, fibrates and immediate-release nicotinic acid (NA), but one report suggested no benefit from extended-release NA, and little is known of combination therapy. We hypothesized that adding a fibrate and NA to statin therapy would progressively suppress postprandial triglyceride (TG).

Methods: We treated 11 men and 11 women with low HDLc with atorvastatin (Atv) 10 mg for 4 weeks and performed a 10-hour oral fat tolerance test. Subjects added fenofibric acid (FA, aka Trilipix) 135mg for 8 weeks, then added extended-release NA, titrating to 2 g over 4 weeks, and continued triple therapy with Atv+FA+NA for 6 more weeks. We report results as mean (95% confidence interval).

Results: On Atv fasting TG (in mg/dL) was 160 (131-190), dropped to 121 (91-151) after 8 weeks of Atv+FA (p<0.0005), and dropped again to 90 (60-120) after 10 weeks of Atv+FA+NA (p<0.005 vs Atv, p<0.005 vs Atv+FA). After the fat load, TG rose to a peak of 353 (305-400) on Atv, to a lower peak on Atv+FA of 267 (219-314, p<0.006), and an even lower peak on Atv+FA+NA of 174 (124-224, p<0.0005 vs Atv, p=0.006 vs Atv+FA). The TG incremental area under the curve (iAUC in mg/dL*h) was 770 (618-921) on Atv, dropped to 515 (361-670) on Atv+FA (p<0.0005), and again to 381 (214-547) on Atv+FA+NA (p<0.0005 vs Atv and Atv+FA), a 50% decrease in TG iAUC compared to Atv monotherapy. A postprandial drop in HDLc was mitigated by combination therapy, and HDLc iAUC strongly and inversely correlated with TG iAUC (Spearman’s rho -0.56, p<0.0005). Dual and triple therapies were safe and well-tolerated.

Conclusions: Both fenofibric and nicotinic acid profoundly suppress postprandial triglyceridemia in subjects with low HDLc. Our data suggest that postprandial triglyceridemia diminishes HDLc, an effect that improved on combination therapy. In contrast to another report, we found a substantial further drop in postprandial triglyceride with extended-release NA. To the extent that postprandial triglyceridemia is atherogenic, our results suggest additional mechanisms of benefit for both fenofibric and nicotinic acid.