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Relationship of Lipoproteins to Cardiovascular Events in the Atherothrombosis Intervention in Metabolic Syndrome with Low HDL/High Triglycerides and Impact on Global Health Outcomes (AIM-HIGH) Trial.

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Source

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Abstract

OBJECTIVES:

In this secondary analysis of the AIM-HIGH trial, the objectives were to examine the relationship between niacin treatment, lipoproteins, and cardiovascular (CV) outcomes.

BACKGROUND:

During 3-year follow-up in 3,414 patients with established CV disease and low HDL-C, combined niacin + LDL-lowering therapy did not reduce CV events versus LDL-lowering therapy alone.

METHODS:

Subjects taking simvastatin ± ezetimibe were randomized to extended-release (ER) niacin 1500-2000 mg or minimal immediate-release niacin (<150 mg) as placebo at bedtime. LDL-C in both groups was maintained from 40 to 80 mg/dL. Hazard ratios (HR) were estimated by Cox proportional hazards for relationships between lipoproteins and the composite endpoint of CV death, myocardial infarction, acute coronary syndrome, ischemic stroke, or symptom-driven revascularization.

RESULTS:

CV outcomes were not associated with ER niacin in any baseline lipoprotein tertile. In a subset of patients in both the highest triglyceride (≥198 mg/dl) and lowest HDL-C (<33 mg/dl) tertiles, ER niacin showed a trend toward benefit (HR=0.74, p=0.073). In-trial LDL-C, nonHDL-C, and TC/HDL-C ratio were positively associated with CV events in the control group, but these relationships were absent in the ER niacin group.

CONCLUSIONS:

Baseline lipoprotein tertiles did not predict differential benefit or harm with ER niacin added to LDL-lowering therapy, but a small dyslipidemic subgroup may benefit. ER niacin attenuated expected relationships of lipoprotein risk factors with CV events, raising the possibility that nonlipoprotein actions of niacin could impact risk.