



Should measurement of ApoB/ApoA-1 ratio be incorporated into clinical guidelines?

Pooled analyses of two recent major statin studies - the Incremental Decrease in Endpoints through Aggressive Lipid-Lowering (IDEAL) and Treating to New Targets (TNT) - show that the ratio of atherogenic to atheroprotective lipoproteins (i.e. apolipoprotein B/apolipoprotein A-I) may be the best predictor of cardiovascular risk.¹ These data build on evidence from the INTERHEART study, a global case-control study, which showed that an elevated ratio of apoB (a measure of low-density lipoprotein [LDL] cholesterol) to apoA-1 (the main constituent of high-density lipoprotein [HDL] cholesterol), was the most important potentially modifiable predictor of heart attacks.²

Researchers pooled year 1 data from a total of 17,987 patients on statin therapy, 8,529 from IDEAL and 9,458 from TNT, to investigate the value of the ratio of apoB/apoA-1, apoB, LDL cholesterol and the ratio of LDL/HDL cholesterol in predicting risk of major cardiovascular events (MCVE). MCVE were a composite of nonfatal myocardial infarction, coronary heart disease death, resuscitated cardiac arrest and stroke.

Univariate analysis using a Cox proportional hazards regression model adjusted for trial, age, and gender was used to assess the relationship of each parameter to MCVE risk. Multivariate analysis was also used for analysis of pairs of variables, to assess the independence of any relationship of one predictor to risk after the relationship of the other predictor had been taken into account.

Of all variables investigated, apoB/apoA-1 was shown to be the strongest predictor of MCVEs. These findings provide a rationale for clinical guidelines to incorporate measurement of the apoB/ApoA-1 ratio as a predictor of risk.

References

1. Kastelein JJ, Pedersen TR. Superiority of apoB/apoA-I ratio for predicting cardiovascular risk in pooled analyses of the Incremental Decrease in Endpoints through Aggressive Lipid-Lowering (IDEAL) and Treating to New Targets (TNT) trials. Presented at the American Heart Association Scientific Sessions 2006, Abstract 3357.
2. Yusuf S, Hawken S, Ounpuu S *et al.* Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *Lancet* 2004; 364: 937-52.