ApoB to apoA-I ratio best for calculating MI risk

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MedWire News: The ratio of apolipoprotein (apo)B to A-I is considerably better than any of the cholesterol based ratios for estimating risk for acute myocardial infarction (MI) in a wide range of ethnic groups, report investigators from the INTERHEART study.

"Perhaps no issue in lipidology has been as contentious as whether apoB and apoA-I are better markers than are their cholesterol counterparts of risk of vascular disease," Matthew McQueen (McMaster University, Hamilton, Ontario, Canada) and colleagues write in *The Lancet*.

As previously reported by *MedWire News*, prospective studies including AMORIS, Framingham, and EPIC-Norfolk have arrived at conflicting conclusions about the relative use of apoB/apoA-I for vascular risk prediction.

They add that as all the previously published major guidelines recommend use of a cholesterol-based approach, apolipoprotein measures have essentially been excluded from clinical use, despite some existing evidence for their potential superiority in cardiovascular risk prediction.

For this study, McQueen and team recruited 9345 MI patients and 12,120 age- and gender-matched controls from 52 countries across the world. The participants were aged an average of 57.4 years and were tested for plasma lipid, lipoprotein, and apo levels.

When comparing apo with cholesterol ratios, the researchers found that the apoB to A-I ratio had the highest population attributable risk for MI of 54% versus 37% for the low-density lipoprotein (LDL) to high-density lipoprotein (HDL) cholesterol ratio and 32% for the total to HDL cholesterol ratio.

Each standard deviation increase in apoB/A-I increased MI risk by 59%, compared with an increase of just 17% in the total to HDL cholesterol ratio.

The authors note that these results were consistent across ethnic groups, gender, and age.

The C-statistic, calculated from area under the curve of receiver operator curves, was also higher for the apoB to A-I ratio than for the total to HDL cholesterol ratio at 0.641 versus 0.577, respectively, confirming its status as a better predictor of MI risk.

McQueen *et al* conclude: "Our data provide broad and straightforward support that apoB and apoA-I should be introduced worldwide into clinical practice for the assessment of the risk of vascular disease."

In an accompanying editorial, Lars Lind (University of Uppsala, Sweden) agreed with

the investigators, but added that "prospective data are also needed to clarify this matter because lipid measurements in case-control studies might be affected by the disease state or treatment initiated before sampling of blood."

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