

Abstract

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Improved identification of patients with coronary artery disease by the use of new lipid and lipoprotein biomarkers.

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OBJECTIVE: Increasing attention is being directed toward new lipid and lipoprotein biomarkers as risk factors for coronary artery disease, although limited information is available on the diagnostic accuracy of these new biomarkers for the identification of patients with coronary artery disease.

METHODS: In the present study, levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, triglycerides, lipoprotein-associated phospholipase A2 (Lp-PLA2), and oxidized LDL/HDL cholesterol were determined in 431 apparently healthy men and women without clinical evidence of coronary artery disease who were matched for age and gender with 490 men and women with coronary artery disease who participated in the Second Fragmin and Fast Revascularization During Instability in Coronary Artery Disease (FRISC-II) trial. Diagnostic accuracy was determined by receiver-operating characteristic curve analysis by measuring the area under the curve.

RESULTS: The diagnostic accuracies of each lipid or lipoprotein biomarker (in descending order of area under the curve) were 0.867 for oxidized LDL/HDL cholesterol (95% confidence interval [CI] 0.844 to 0.890), 0.826 for oxidized LDL (95% CI 0.800 to 0.852), 0.775 for 1/HDL cholesterol (95% CI 0.745 to 0.805), 0.764 for total/HDL cholesterol (95% CI 0.733 to 0.795), 0.631 for triglycerides (95% CI 0.594 to 0.667), 0.597 for Lp-PLA2 (95% CI 0.558 to 0.615), 0.577 for LDL cholesterol (95% CI 0.539 to 0.615), and 0.520 for total cholesterol (95% CI 0.482 to 0.537).

CONCLUSION: In conclusion, these findings indicate that the ratio of oxidized LDL to HDL cholesterol was a more potent biomarker for discriminating between subjects with and without coronary artery disease than traditionally measured lipids and lipoproteins and Lp-PLA2.

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