

Abstract

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Plasma Levels of HDL Subpopulations and Remnant Lipoproteins Predict the Extent of Angiographically-Defined Coronary Artery Disease in Postmenopausal Women.

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OBJECTIVE: The association of coronary heart disease (CHD) with subpopulations of triglyceride (TG)-rich lipoproteins and high-density lipoproteins (HDL) is established in men, but has not been well characterized in women.

METHODS AND RESULTS: Plasma HDL subpopulation concentrations, quantified by 2-dimensional gel electrophoresis, and plasma remnant-like particle cholesterol (RLP-C) concentrations were measured in 256 postmenopausal women with established CHD and in 126 CHD-free postmenopausal women. Coronary artery disease was assessed in women with CHD by quantitative coronary angiography. Plasma RLP-C and prebeta1 HDL concentrations were higher and alpha1 and alpha2 HDL concentrations were lower in CHD than in CHD-free women. After adjustment for conventional CHD-risk factors, plasma levels of RLP-C were positively associated with the degree of coronary artery disease. In similar analyses, plasma prebeta1 HDL particle concentrations were positively associated and alpha2 HDL particle concentrations were inversely associated with the extent of coronary atherosclerosis. Plasma TG, low density lipoprotein cholesterol, and HDL cholesterol levels were not associated with the degree of coronary atherosclerosis.

CONCLUSIONS: The degree of coronary atherosclerosis in postmenopausal women is linked to a dysregulation of the TG/HDL metabolism. Subpopulations of TG-rich and HDL lipoproteins are better predictors of disease than TG and HDL cholesterol concentrations.

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