

Abstract

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Association of remnant-like particle cholesterol with coronary artery disease in patients with normal total cholesterol levels.

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BACKGROUND: Limited information is available as to whether there is a difference in the association of lipid and fibrinolytic variables with coronary artery disease according to the presence or absence of elevated serum total cholesterol. We examined the levels of various lipid and fibrinolytic variables including remnant-like particle cholesterol (RLP-C). RLP-C is a recently established simple assay method for the estimation of triglyceride-rich lipoprotein remnants.

METHODS AND RESULTS: Levels of total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol (HDL-C), triglyceride, lipoprotein(a), RLP-C, uric acid, blood glucose, tissue plasminogen activator, tissue plasminogen activator inhibitor type 1, antithrombin III, and protein C were measured in 208 patients who underwent diagnostic coronary angiograms. Of these 208 patients, 57 were hypercholesterolemic ($>$ or $=$ 220 mg/dL) and 151 were normocholesterolemic. HDL-C showed significant differences between patients with and those without angiographically determined coronary artery stenosis in both hypercholesterolemic and normocholesterolemic patients ($P = .0025$ and $P = .0003$, respectively). Both RLP-C and uric acid showed significant differences only in the normocholesterolemic subgroup ($P = .0006$ and $P = .0060$, respectively). This difference in uric acid was not significant by multivariable analysis. The ratio of RLP-C/HDL-C was demonstrated to be highly significantly ($P < .0001$) associated with coronary artery stenosis in patients with normal total cholesterol, whereas there was no statistically significant association in the hypercholesterolemic patient subgroup.

CONCLUSIONS: Our current study disclosed that RLP-C levels are strongly associated with coronary artery disease, especially in patients with normal total cholesterol levels. Moreover, RLP-C/HDL-C ratio may be even more significantly associated with the presence of coronary artery stenosis in normocholesterolemic patients.

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