Abstract

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High serum levels of remnant lipoproteins predict ischemic stroke in patients with metabolic syndrome and mild carotid atherosclerosis.

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BACKGROUND AND OBJECTIVE: Metabolic syndrome is prevalently associated with stroke. Triglyceride-rich lipoproteins contribute to atherothrombotic complications in metabolic syndrome. This study examined whether high levels of remnant lipoprotein, atherogenic triglyceride-rich lipoprotein, may be associated with future ischemic stroke in metabolic syndrome.

METHODS AND RESULTS: We followed up 292 consecutive patients with metabolic syndrome meeting ATP III criteria and mild carotid plaques for a period of </=24 months until occurrence of an ischemic stroke. Remnant lipoprotein (remnant-like lipoprotein particles cholesterol; RLP-C) were measured by an immunoseparation method. Twenty-two ischemic stroke events occurred during follow-up. A multivariate Cox proportional hazards models showed that high RLP-C levels were a significant and independent predictor of ischemic stroke events ($p<0.01$). Echolucent carotid plaques were also a significant predictor of ischemic stroke that was independent of other carotid ultrasound parameters in Cox proportional hazards models ($p<0.01$). High RLP-C levels were intimately and independently associated with carotid plaque echolucency ($p<0.01$).

CONCLUSIONS: High RLP-C levels are an independent risk factor for future ischemic strokes in metabolic syndrome. High RLP-C levels may be related to echolucent carotid plaque, partly accounting for high risk for ischemic stroke in metabolic syndrome.

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