

Abstract

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Small dense low-density lipoprotein in familial combined hyperlipidemia: Independent of metabolic syndrome and related to history of cardiovascular events.

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INTRODUCTION: It is unclear whether small dense low-density lipoprotein (sdLDL) are associated with familial combined hyperlipidemia (FCHL), independently of the metabolic syndrome (MS). It is also unclear whether sdLDL are related to history of cardiovascular (CVD) events in FCHL patients, independently of MS.

PATIENTS AND METHODS: Serum levels of sdLDL, expressed as percentage of total LDL cholesterol (LDL score), were determined in 137 probands with FCHL and in 133 normolipidemic, normotensive, normoglycemic healthy subjects.

RESULTS: In binary logistic regression age- and gender-adjusted LDL score values above the 90th and 95th percentiles of the values in the control group (10.23 and 13.11%, respectively) were found to be significant predictors of FCHL status, independently of MS diagnosis ($p=0.007$ and $p<0.0001$, respectively). Values of the LDL score above the 90th and the 95th percentile of the control group resulted to be significantly related to FCHL status, even after adjustment for the components of MS ($p=0.006$ and $p=0.001$, respectively). Among FCHL patients, values of the LDL score above 95th percentile of the values in the control group were found to be significantly related to personal and/or family history of CVD events, independently of age, gender, total cholesterol, apolipoprotein (apo) B, and MS status ($p=0.016$). The same significant relationship was found adjusting for all components of MS ($p=0.034$).

CONCLUSIONS: High concentrations of sdLDL are highly specific markers of FCHL, independently of concomitant MS. In FCHL patients high levels of sdLDL are related to history of CVD events, independently of MS, total cholesterol and apo B.

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