

Abstract

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High serum cholesteryl ester transfer rates and small high-density lipoproteins are associated with young age in patients with acute myocardial infarction.

Zeller M, Masson D, Farnier M, Lorgis L, Deckert V, Pais de Barros JP, Desrumaux C, Sicard P, Grober J, Blache D, Gamber P, Rochette L, Cottin Y, Lagrost L.

Laboratory of Cardiovascular and Experimental Physiopathology and Pharmacology, IFR Santé STIC, Dijon, France.

OBJECTIVES: Our aim was to characterize cholesteryl ester transfer protein (CETP) activity in the early phase of acute myocardial infarction (MI).

BACKGROUND: Cholesteryl ester transfer protein catalyzes the transfer of cholesteryl esters from high-density lipoprotein (HDL) donors to apolipoprotein B-containing lipoprotein acceptors.

METHODS: The CETP concentration, lipid profiles, and the rate of cholesteryl ester transfer (CET) from a tracer dose of radiolabeled HDL toward endogenous lipoproteins were determined within 24 h after symptom onset.

RESULTS: Among 347 patients with first MI, CETP concentration, triglycerides, and non-HDL-cholesterol increased across tertiles of the CET rate, whereas HDL-cholesterol, HDL, and LDL sizes decreased gradually. Among lipoprotein donors and acceptors, the best predictors of the CET rate were HDL2b and non-HDL-cholesterol, respectively. Mean age at first MI was 8.5 years lower in the patients from the highest CET tertile than in those in the lowest CET tertile. Diagonal stratification according to both non-HDL-cholesterol and HDL2b tertiles revealed that patients in the highest CET group were 18 years younger than patients in the lowest CET group. Parameters of the high CETP mass/high non-HDL-cholesterol/low HDL2b triad were independently associated with the CET rate.

CONCLUSIONS: In patients with acute MI, high CET rates are characterized by the presence of the high CETP mass/high non-HDL-cholesterol/low HDL2b triad. The association of high CET rates with young age at first MI lends support to a significant contribution of CETP to the accelerated progression of disease among asymptomatic patients.

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