

EFFECTS OF OBESITY AND FAMILY HISTORY OF DIABETES ON THE ASSOCIATION OF CETP RS6499861 WITH HDL CHOLESTEROL LEVEL IN KOREANS

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Abstract

Objective: To examine the associations of CETP rs6499861 and rs12708980 with HDL-C considering obesity and family history of diabetes (FHD) in Korean men and women.

Methods: we analyzed the association of CETP single nucleotide polymorphisms (SNPs) with HDL-C among individuals selected from a hospital (n=4 294) and the Bundang-Gu area in Korea (n=2 304).

Results: We found that the CETP SNP rs6499861 was associated with a lower HDL-C level (effect per allele: -2.044 mg/dl, P<0.0001). Individuals with a rs6499861 CG/GG genotype had a 1.45-fold higher risk of an abnormal level of HDL-C (<40 mg/dl) than those with a CC genotype. This genotype-HDL-C association was stronger in women (odds ratio (OR)=1.99, 95% confidence interval (CI): 1.39–2.85) compared with men (OR=1.33, 95% CI: 1.10–1.61) and in women with a family history of diabetes (OR=4.82, 95% CI: 1.86–12.5, P=0.0012) compared with women without a family history. Relative to individuals with a CC genotype and body-mass index <25.69 kg/m², individuals with a CG/GG genotype and body-mass index ≥25.69 kg/m² had an OR (95% CI) of 2.61 (1.97–3.47).

Conclusion: These findings indicate that CETP variants are linked to HDL-C level in Koreans and that this link is stronger in obese men and in women who have a family history of diabetes.

Keywords

CETP; HDL cholesterol; physical activity; polymorphisms