Relationship between the cholesterol ester transfer protein *TaqIB* polymorphism and the lipid-lowering effect of atorvastatin in patients with coronary atherosclerotic heart disease

J. Li¹, L. Zhang¹, N.Z. Xie¹, B. Deng², L.X. Lv³ and L.Q. Zheng³

¹Department of Cardiology, Tongji Hospital, Tongji University, Shanghai, China
²Department of Cardiology, Longhua Hospital, Shanghai University of Traditional Chinese Medicine, Shanghai, China
³Department of Biochemistry, Medical School of Tongji University, Shanghai, China

Corresponding author: J. Li
E-mail: jianlicncn@163.com

Received January 28, 2013
Accepted September 29, 2013
Published March 24, 2014
DOI http://dx.doi.org/10.4238/2014.March.24.21

**ABSTRACT.** This study aimed to investigate the relationship between the cholesterol ester transfer protein (CETP) gene *TaqIB* polymorphism and the lipid-lowering effect of atorvastatin in patients with coronary atherosclerotic heart disease. Two hundred eighty-eight patients were divided into a control group, an acute coronary syndrome (ACS) group, and a stable coronary heart disease (CHD) group. Blood biochemical indices were determined using the enzyme method, and polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) analysis was performed to study the *TaqIB* polymorphism of the CETP gene. The ACS and stable CHD groups were treated with atorvastatin, and blood lipid levels were reexamined after three months. Plasma levels of total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), and lipoprotein(a) were all significantly higher in the ACS
and stable CHD groups compared to the control group (P < 0.05 or P < 0.01). After three months of treatment with atorvastatin, plasma levels of TC, LDL-C, triglycerides (TG) (only in patients with genotype B2B2), and lipoprotein(a) (only in patients with genotype B1B2) were all significantly decreased (P < 0.05 or P < 0.01). After treatment, the plasma level of TG was lower in patients with genotype B2B2 compared to patients with genotypes B1B1 or B1B2 (B1 carriers) (P < 0.01). Therefore, the CETP TaqIB polymorphism is associated with the lipid-lowering effect of atorvastatin in patients with CHD.

**Key words:** Cholesterol ester transfer protein; Gene; Atorvastatin; Coronary artery disease