Association Between Apolipoprotein E Polymorphism in Coronary Artery Disease Patients in Kermanshah Population, In West Of Iran

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Objective: Coronary artery disease (CAD) is the major cause of death in developing countries, such as Iran. Apolipoprotein E(APOE) gene($\varepsilon$2,$\varepsilon$3,$\varepsilon$4) is considered an important genetic determinant of CAD. The aim of this study was to investigate the relationship between ApoE polymorphism with lipid variation in CAD patients in Kermanshah, Iran.

Methods: This case-control study consisted of 115 CAD patients who angiographically had at least 30% stenosis and 135 unrelated controls. ApoE polymorphism was detected by PCR-RFLP methods.

Results: The ApoE-$\varepsilon$4 allele frequency was significantly higher in the CAD group than in controls(18.7% versus 3.3%, $p<0.001$). The odds ratio(ORs) for CAD in individuals with $\varepsilon$4 allele was 10.2(95%CI=4.8-21.6,$p<0.001$). ORs for $\varepsilon$2 allele was found to be 3.4 (95%CI =1.6-7.6,$p=0.01$). The genotype frequencies for $\varepsilon$2, $\varepsilon$3, and $\varepsilon$4 alleles in control group were 4.1%, 92.6%, and 3.3%, respectively. LDL-C level was significantly higher ($p<0.001$) in CAD patients compared with the control group.

Conclusions: ApoE-$\varepsilon$4 allele is a risk factor for CAD, so that carrier of this allele with high level of LDL-C may be susceptible to CAD and myocardial infarction.

KEY WORDS: APOE; Coronary artery disease; genetic polymorphism; genetic risk factor; lipid profile; variants; Kermanshah Iran.