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Traditional risk factors and angiotensin-converting enzyme insertion/deletion gene polymorphism in coronary artery disease

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ABSTRACT. We investigated whether the insertion/deletion (I/D) polymorphism in the angiotensin-converting enzyme (ACE) gene and serum ACE levels are associated with traditional risk factors of coronary artery disease (CAD). We enrolled 250 individuals without CAD and 750 individuals suffering from CAD who were angiographically diagnosed. Biochemical risk factors, the *ACE* (I/D) gene polymorphism, and ACE serum levels were compared. *ACE* genotypes were determined using real-time polymerase chain reaction. ACE serum levels were determined using an enzyme-linked immunosorbent assay. Lipid parameters were determined spectrophotometrically using an autoanalyzer. Compared to the control group, the CAD group showed significantly higher serum

ACE levels ($P < 0.001$). The highest ACE levels were found in those with the DD genotype. Other genotypes also presented statistically significant differences. We observed a significant difference between the control and coronary patient groups regarding the levels of total cholesterol, triglyceride, high-density lipoprotein-cholesterol, and low-density lipoprotein-cholesterol ($P < 0.05$). *ACE* (I/D) genotypes and serum ACE levels may be associated with risk factors and the development of CAD.

Key words: Angiotensin-converting enzyme; Coronary artery disease; Polymorphism

