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Association of Angiotensin Converting Enzyme (ACE) Gene Polymorphism and Diabetic Nephropathy

T Golmohamadi, A Nikzamir, M Nakhjavani, M Zahrai , A Amirzargar , R Saffari

Abstract:

Angiotensin I-converting Enzyme (ACE) gene polymorphism; genotype DD or D allele may be involved with an increased susceptibility to type 2 diabetes and diabetic nephropathy (DN). We examined the frequency of ACE gene polymorphism in 170 patients (85 type 2 diabetes with nephropathy and 85 without it) in Tehran, Iran. DNA was extracted from the white blood cells and the I/D polymorphism of the ACE gene was detected by PCR. The frequency of DD, ID and II genotypes in type 2 diabetic patients were 20%, 61.2% and 18.8%, and in patients with nephropathy 30.6%, 55.3%, 14.1%, respectively. The DD genotype of the DN group was higher than that of the type 2 diabetes patients (30.6% vs 20%, P=0.157, RR=1.3) and the control group (30.6% vs 14.3%, P=0.006, RR=2.9). The frequency of D allele in nephropathic patients was 58.2% as compared to the type 2 diabetic patients without nephropathy (50.5%) P=0.19, RR=1.16. The D allele frequency in the DN group was found slightly higher than of the type 2 diabetes (X2=0.684, OR=0.709, 95%CI: 0.313-1.606, P=0.408) which indicated the D allele was not associated with DN. It is suggested that DD genotype and D allele are not associated with diabetic nephropathy.

Keywords:

Angiotensin converting enzyme ، Genetic polymorphism ، Insertion/deletion

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