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Polymorphism of angiotensin II type 1receptor gene in essential hypertension in Iranian population

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Abstract

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Renin angiotensin system (RAS) has an important role in the regulation of hypertension. RAS includes angiotensinogen, Angiotensin Converting Enzyme (ACE), angiotensine II and angiotensin receptors (AGTR). Angiotensin receptors have several types but AT1R is the main subtype. In this study the effect of A1166→C polymorphism of AT1R gene and the role of possible genetic differences in hypertension was investigated. DNA of the whole blood leukocytes from hypertensive patients and healthy people of Mashhad population as control, were extracted and then PCR was performed on prepared samples followed by amplification of the target fragments which were then digested with the DdeI restriction enzyme. Data were classified on the basis of genotypes and gender and then alleles and genotypes frequencies were analyzed statistically. There were no significant differences in the genotype, and allele frequencies between hypertensive and normotensive subjects. However, frequency of C allele of AT1R gene in hypertensive women was significantly higher than normotensive women (P<0.05). These results suggest that C allele of AT1R gene may be an important risk factor for essential hypertension in women.

Author keywords

Angiotensin; Gene polymorphisms; Hypertension

Indexed Keywords

EMTREE drug terms: angiotensin 1 receptor; angiotensin II; angiotensin receptor; angiotensinogen; dipeptidyl carboxypeptidase; DNA; restriction endonuclease

EMTREE medical terms: adult; article; controlled study; DNA extraction; essential hypertension; female; gene amplification; gene frequency; gene targeting; genetic difference; genetic polymorphism; genotype; human; Iran; leukocyte; major clinical study; male; nucleotide sequence; polymerase chain reaction; renin angiotensin aldosterone system

Molecular Sequence Numbers: GENBANK,AF245699(referenced)

Chemicals and CAS Registry Numbers: angiotensin II, 11128-99-7; angiotensinogen, 11002-13-4, 64315-16-8; dipeptidyl carboxypeptidase, 9015-82-1; DNA, 9007-49-2

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