

Association of rs1800624 Polymorphism in Receptor for Advanced Glycation End Products Gene Promoter with the Risk of Diabetic Nephropathy

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ABSTRACT

Background and Aim: Although the molecular mechanisms involved in the pathogenesis of diabetic nephropathy are still unclear, the role of advanced glycation end products (AGEs) and their associated receptors (AGER) in initiating the inflammatory process in this disease has attracted attention. The aim of this study was to investigate the relationship between rs1800624 polymorphism of AGER gene with risk of diabetic nephropathy in Iranian population.

Materials and Methods: In this case-control study, patients were divided into two groups, group1 without diabetic nephropathy (n = 71) and group2 with diabetic nephropathy (n = 79). TETRA-Primer ARMS-PCR technique was used to determine the frequency of genotype and allele of rs1800624 polymorphism in the promoter region of AGER gene. Using standard methods, biochemical tests including measurement of glucose, creatinine, glycosylated hemoglobin and blood urea nitrogen and calculation of eGFR were performed. We used SPSS and FAMHAP softwares for data analysis.

Results: The results showed that AA genotype rs1800624 polymorphism in the promoter region of the AGER gene may be associated with an increased risk of diabetic nephropathy. Allele analysis also showed that allele A of the polymorphism may be associated with an increased risk of developing nephropathy, although the results were not statistically significant between the two groups in relation to rs1800624 polymorphism.

Conclusion: The findings of this study showed that there was no statistically significant relationship between rs1800624 polymorphism in AGER gene with diabetic nephropathy in the Iranian population, but increase in sample size may result in a tendency to develop diabetic nephropathy.

Keywords: Diabetic nephropathy, AGER gene, Polymorphism, Iranian population

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