عنوان مقاله:

Evaluation of Relationship between Single-nucleotide Polymorphism in TNF-gene Promoter and Susceptibility to Atherosclerosis in Fatemeh Zahra Hospital

محل انتشار:

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خلاصه مقاله:

Background: Tumor necrosis factor-alpha (TNF-α) is a cytokine of proinflmmatory that elicits a polyvalent initial response of inflammatory cells in coronary atherosclerosis. Polymorphism and susceptibility to atherosclerosis may be related to the TNF-α gene promoter. The aim of this study was to investigate single nucleotide polymorphisms of the TNF-α gene promoter at two sites in patients with atherosclerosis referred to the Fatemeh al-Zahra Hospital, Sari City. Methods: This study was a case control study which involved ۱۲۰ patients (>۵۰% stenosis) and ۱۲۰ healthy individuals (<۱۰% stenosis). Genomic DNA was extracted with the phenol-chloroform method from white blood cells. Genotypes and TNF-α gene polymorphisms were analyzed using RFLP-PCR. Genotype frequency analysis, Hardy-Weinberg equilibrium test, and chi-square analysis have been conducted using SPSS software, version ۲۲. Results: Genotype frequencies of GA, GG, and AA at position –۳۰۸ of the TNF-α gene promoter in patients were ۱۲.۵%, ۷۵%, and ۱۲.۵%, respectively. The respective values in healthy subjects were ۷.۵%, ۲۱.۷%, and ۷۰.۸%. Allele A to G polymorphism increased the risk of disease by ۱۲.۷۱۶%. The genotype frequencies of the AC, CC, and AA at position –۸۶۳ of the TNF-α gene promoter in patients were ۳.۳%, ۶۹.۲%, and ۲۷.۵%, respectively. The respective values in healthy individuals were ۲.۵%, ۱۱.۷%, and ۸۵.۸%. Allele A to C polymorphism increased the risk of the disease by ۱۶.۳۷۳%. The difference in the risk of atherosclerosis was significant (P < ۰.۰۵). Conclusion: Mutations in TNF-α gene promoter could increase susceptibility to atherosclerosis. Determination of the genotypes of the individuals in these regions can .help identify patients at risk for this disease

کلمات کلیدی:

PCR, PCR-RFLP, TNF-α, Polymorphism, Atherosclerosis, Inflammatory cytokines