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Investigation of IL-12B gene polymorphism (rs3212227) in Iranian patients with alopecia areata

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Objective: Alopecia areata (AA) is an autoimmune disease characterized by patchy hair loss affecting both scalp and body hair. Although the etiology and pathogenesis of this disease are still unknown, a polymorphism within IL-12B gene has been described in few studies to be associated with AA susceptibility. Yet, these findings had so far not been independently replicated, and no data on a possible association of IL-12B mutation and AA in Iranian population were available.

Methods: This study contains 30 AA patients and 15 healthy controls. Genomic DNA was isolated using DNG-plus and PCR-RFLP analysis was performed to detect IL-12B rs3212227 polymorphism. Several relevant information such as demographic data (age, gender) or clinical characteristics were analyzed for a possible effect of these factors on susceptibility to AA in patients who carry CC, AC, and AA genotypes.

Results: No association between the IL-12B rs3212227 mutation and susceptibility to AA was observed in our Iranian cohort. PCR-RFLP results showed that frequency of CC genotype (13.3% vs. 6.6%) are similar in both patient and control groups. AC genotype was detected in 46.6% and 6.6% of patients and controls, respectively. The AA genotype which is wild genotype had a higher frequency in healthy individuals. Statistical analyses indicate that there is no significant difference in the distribution of genotypes between patients and controls ($P=0.12$). Although the C allele frequency of IL-12B was higher in the patients than control subjects (36.6% vs. 10% respectively), but there is no significant difference ($P=0.12$).

Conclusion: We here demonstrate that the IL-12B rs3212227 polymorphism is not associated with the risk to develop AA in our Iranian cohort. Therefore, this study failed to confirm a reported association between gene mutation and susceptibility to AA. Hence, the genetic predisposition to develop AA greatly varies among different ethnic groups.

Biography

Reyhaneh Abgoon has received her Master's degree in Cellular and Molecular Biology from Azad University. Her research interests include Immunology, Molecular Immunology, especially Autoimmune Diseases. She is working as a Supervisor in Banej Elixir molecular research institute in Tehran. She has presented several research abstracts about alopecia areata which is an autoimmune disease at various international conferences.

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