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Research article

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Investigation of HLA-DQB2 allele in Patients with Alopecia Areata

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Abstract:

Aim and Background: Alopecia Areata (AA) is a common immune-mediated disease which considered as the second most common cause of hair loss in humans. This hair loss targets hair follicles, and has a genetically complex inheritance. HLA genes such as HLA class II can influence the development of AA. The aim of the study was to investigate whether HLA-DQB2 allele is associated with AA.

Materials and Methods: Alopecia Areata patients and control subjects were enrolled in this study. A total of 30 AA patients (13 female and 17 male with mean age 26.3±12.5) and 15 healthy controls (5 Female and 10 Male with mean age 30 ±5.88) were included and analyzed in a case–control study. Genomic DNA was prepared using DNG plus method. Polymerase chain reaction with sequence specific primers technique (PCR-SSP) used to detect HLA-DQB2. Association of HLA-DQB2 allele with family history, age of onset, and stress were assessed by logistic regression analysis.

Results: HLA-DQB2 allele did not show a significant association with susceptibility to AA and had a frequency of 56.7% in AA patient vs 26.7% in healthy controls (OR = 3.596, 95% CI = 0.929-13.916, *p value* = 0.064). Furthermore, this study did not show any association of HLA-DQB2 allele with family history (OR =0.3, 95% CI = 0.06 – 2.32, *p value* = 0.3), phobia (OR = 1.57, 95% CI = 0.38-6.4 *p value* = 0.5) and stress (OR = 1.36, 95% CI = 0.28-6.48 p *value* = 0.6), family history (OR=0.4, 95%CI=0.06, p value=0.3). the significant association found with sunlight exposure with HLA-DQB2 allele in AA (OR=4.46,95%CI=0.95-20.83, p value=0.05).

Conclusion: Our data do not show a correlation between the HLA-DQB2 allele and occurrence of AA and clinical data in Iranian population. To our knowledge this is the first study to frequency of HLA-DQB2 allele in Iranian AA patients.

Keywords: HLA-DQB2, PCR-SSP, Alopecia Areata, autoimmune disease

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