

Original Paper

Association of Interleukin-18 gene polymorphism -137G/C with Allergic rhinitis

Ramazi Sh (M.Sc)¹, Khazraei HR (Ph.D)^{*2}, Motovalibashi M (Ph.D)³
Iziy E (M.Sc)⁴, Hashemzade Chaleshtori M (Ph.D)⁵, Abolhassani M (B.Sc)⁶

¹Ph.D Candidate in Genetic, Cellular and Molecular Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran. ²Assistant Professor, Department of Otolaryngology, Shahrekord University of Medical Sciences, Shahrekord, Iran. ³Associate Professor, Division of Genetics, Department of Biology, Faculty of Science, University of Isfahan, Isfahan, Iran. ⁴M.Sc in Cellular and Developmental, Traditional and Complementary Medicine Research Center, Sabzevar University of Medical Sciences, Sabzevar, Iran. ⁵Professor, Department of Genetic, Cellular and Molecular Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran. ⁶B.Sc in Genetic, Biochemistry Research Center, Shahrekord University of Medical Sciences, Shahrekord, Iran.

Abstract

Background and Objective: The interleukin-18 (IL-18) gene on chromosome 11 has been suggested as a susceptibility factor for allergies. It is a member of the IL-1 family that was originally described as interferon (IFN- γ)-inducing factor. IL-18 might initiate Th2 responses with production of IgE via the stimulation of IL-4 and IL-13 synthesis in mast cells and in basophil and eosinophil recruitment, such as allergic inflammation. This study was done to assess the association of Interleukin-18 gene polymorphism -137G/C with allergic rhinitis.

Methods: This case-control study was performed on 293 allergic rhinitis patients and 218 healthy control volunteers. The IL-18 polymorphism was analyzed by polymerase chain reaction and restriction fragment length polymorphism (PCR-RFLP) analysis.

Results: The frequency of the GG, GC and CC genotypes were 64.2%, 32.1% and 3.7% in healthy controls and 60.1%, 35.5% and 4.4% in allergic rhinitis patients, respectively. This difference was not significant.

Conclusion: This study suggests that IL-18 polymorphism gene -137G/C may not be participated as a risk factor in the pathogenesis of allergic rhinitis.

Keywords: Allergic rhinitis, Interleukin-18, Polymorphism

* Corresponding Author: Khazraei HR (Ph.D), E-mail: a1hamid@yahoo.com

Received 10 May 2014

Revised 29 Jun 2014

Accepted 20 Jul 2014