

IL-15 Gene Polymorphisms Are Associated with Resistance to Visceral Leishmaniasis

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Background & Objectives: Protozoan parasites of the genus *Leishmania* infect millions of people worldwide causing a wide spectrum of diseases collectively termed leishmaniasis that vary in their clinical manifestations. There are several reports on the importance of IL-15 in the immunity against leishmaniasis. Since the production of IL-15, like other cytokines, is under control of its gene, we tried to find any relationship between kala azar and IL-15 genetic polymorphisms.

Methods: One hundred and seventeen patients with kala-azar and 146 individuals who lived in the same area as patients and didn't have any history of leishmaniasis, joined this study. DNAs extracted from samples were genotyped for IL-15 (267C/T, 367G/A, 13687C/A, and 14035A/T) polymorphisms using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) Methods.

Results: IL-15 (267) TT and T genotype and allele were significantly higher in the patients than the controls ($P < 0.001$ and $P < 0.003$, respectively). Also IL-15 (13687) CC and C genotype and allele were less frequent in the controls than the patients ($P < 0.015$ and $P < 0.031$, respectively). Haplotype analysis showed a higher frequency of 13687C/267T/367G/14035A in the patients than the controls ($P < 0.000001$).

Conclusion: As data shown IL-15 267T allele could be considered as a susceptibility factor for kala azar. Vice versa, IL-15 13687C allele might be one of the genetic resistance factors against kala azar. In addition, we can consider the haplotype 13687C/267T/367G/14035A as a susceptibility factor for kala azar. Evaluation IL-15 level beside genetic polymorphisms is recommended.

Keywords: IL-15; Gene Polymorphisms; Resistance; Visceral Leishmaniasis