Interferon-Gamma Gene Polymorphism in Patients with Tuberculosis

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Abstract

Background and objectives: Interferon-Gamma and interferon Gamma receptor (IFNγ ∕ IFNγR1) are the main genes associated with susceptibility to tuberculosis. We aimed at studying on interferon-Gamma Gene polymorphism(- 56 C/T) in people suffered from tuberculosis (TB).

Material and Methods: In this case-control study, the subjects were 62 individuals with TB and 74 healthy ones. Genomic DNA was extracted by DNA isolation kit(Roche Corporation), and genotype identification was performed by polymerase chain reaction-Restriction fragment length polymorphism (PCR-RFLP). Chi square and logistic regression, using SPSS soft ware (version 18), was used to compare genotype and alleles between case and control groups.

Results: The frequency of TT genotype in tuberculosis patients and healthy person are 43.5% and 17.5%, respectively. Based on Logistic regression (odd ration 0.148, p=0.0006), there is significant difference between Case and Control. In addition, the frequency of T allele is, in case group, 62.09 % the difference between case and control is significant, based on Logistic regression (odd ratio: 0.418, P=0.028).

Conclusion: It is implied that -56C/T is associated with IFNγR1 promoter in tuberculosis patient. It is found to be associated with increased susceptibility to tuberculosis.

Key words: Tuberculosis, IFNγR, PCR-RFLP