Abstract:

Tuberculosis is one of the oldest human problems, it is still one of the greatest killeres among infectious diseases. *Mycobacterium tuberculosisis* is disrupted host immune response and therefore causes chronic infection. Granuloma formation is an important mechanism of host defense against tuberculosis that leukocytes accumulate at the site of infection. IL-8 is a chemokine that plays an important role in regulating the influx of leukocytes at the site of infection and it is a chemotactic factor for lymphocytes T, neutrophils and monocytes. Elevated IL-8 levels have been shown in tuberculous pleural exudate, bronchoalveolar lavage and cerebrospinal fluids. Single nucleotide polymorphism T / A (rs4073) in the promoter region of the IL-8 gene, -251 bp upstream of the transcription start site, affects the IL-8 protein production by regulating the transcription activity of the gene. Studies have shown this polymorphism is associated with susceptibility to tuberculosis and variation in the production of IL-8 chemokine. In this study, the relationship between the rs4073 polymorphism of the IL-8 gene with susceptibility to pulmonary tuberculosis in 44 patients with pulmonary tuberculosis and 44 healthy controls were investigated. After sampling, white blood cells isolated from whole blood، then DNA was extracted from these cells by enzymatic assay and using Roche kit. SNP genotyping the DNA samples was performed by using tetra primer ARMS-PCR methods and data were analyzed by using version 19 SPSS software. No significant differences between Genotypic and allelic frequencies of -251T/A polymorphism in IL-8 gene was observed in two groups of patients and healthy subjects. No significant association between rs4073 polymorphism of the IL-8 gene and pulmonary tuberculosis in the study population has been found.

Keywords: *Mycobacterium tuberculosisis*, Chemokine, IL-8, promoter, polymorphism, rs4073.

University of Zabol

Graduate school

Faculty of Sciences

Department of Biology

The Thesis Submitted for the Degree of M.Sc

(in the field of Molecular Genetics)

Study of -251 T/A (rs4073) single nucleotide polymorphisms frequency of the gene interlukin-8 (*CXCL8/IL-8*) in patients with pulmonary tuberculosis and healthy controls

Supervisers

Dr. G. Motalleb

Dr. I. Nikokar

By

S. Zarifi

August 2016