

Interleukin-17A and Interleukin-17F mRNA Expressions in Peripheral Blood Mononuclear Cells of Patients with Multiple Sclerosis

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ABSTRACT

Background: Multiple sclerosis (MS) is a CD4⁺ T cell-mediated autoimmune disease affecting the central nervous system (CNS). It was previously believed that Th1 cells were pathogenic T cells in experimental autoimmune encephalomyelitis (EAE). However, the functional role of Th1 cells in EAE has been reconsidered upon the discovery of IL-17-producing T cells which are considered as dominant effectors for inducing autoimmune tissue inflammation. **Objective:** The objective of this study was to assess the role of IL-17A and IL-17F in MS pathogenesis. **Methods:** We evaluated mRNA expression of IL-17A and IL-17F in thirty-five Iranian patients with relapsing–remitting MS (RRMS) and twenty-five healthy controls by Quantitative Real Time PCR. **Results:** The results of this study showed a twenty-fold increase in the expression of IL-17A mRNA in MS patients compared to the control group ($p < 0.0001$). IL-17F mRNA expression in MS patients was thirty three-times greater than control group ($p = 0.0008$). IL-17A mRNA expression in periphery was positively correlated with expression of IL-17F transcripts in MS patients and controls ($p < 0.01$ and $p < 0.05$, respectively). **Conclusion:** These results indicate the critical role of Th17-mediated cytokines in development of MS which classically has been considered as a Th1-mediated disorder. The results of this study showed, for the first time, the importance of IL-17F in MS immunopathogenesis.

Keywords: Multiple Sclerosis (MS), IL-17A, IL-17F, mRNA gene expression

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