Elevated IL-17 and TGF-β Serum Levels: A Positive Correlation between T-helper 17 Cell-Related Pro-Inflammatory Responses with Major Depressive Disorder

Mohammad Hasan Davami[1], Rasoul Baharlou [*1], Abbas Ahmadi Vasmehjani[1], Ahmad Ghanizadeh[2], Mitra Keshtkar[3], Iman Dezhkam[4], Mohammad Reza Atashzar[4]

Abstract:

Introduction: Depression is a mental disorder that highly associated with immune system. Therefore, this study compares the serum concentrations of IL-21, IL-17, and transforming growth factor β (TGF-β) between patients with major depressive disorder and healthy controls. **Methods:** Blood samples were collected from 41 patients with major depressive disorder and 40 healthy age-matched controls with no history of malignancies or autoimmune disorders. The subjects were interviewed face to face according to DSM-IV diagnostic criteria. Depression score was measured using completed Beck Depression Inventory in both groups. The serum concentrations of IL-21, IL-17, and TGF-β were assessed using ELISA. **Results:** The mean score of Beck Depression score in the patient and control groups was 35.4±5.5 and 11.1±2.3. IL-17 serum concentrations in the patients and the control group were 10.03±0.6 and 7.6±0.6 pg/mL, respectively (P=0.0002). TGF-β level in the patients group was significantly higher than compare to the control group; 336.7±20.19 vs. 174.8±27.20 pg/mL, (P<0.0001). However, the level of IL-21 was not statistically different between the two groups 84.30±4.57 vs. 84.12±4.15 pg/mL (P>0.05).

Conclusion: Considering pro-inflammatory cytokines, current results support the associationof inflammatory response and depressive disorder. So, it seems that pro-inflammatory factors profile can be used as indicator in following of depression progress and its treatment impacts.

Keywords: Major depressive disorder, Interleukin-17, interleukin-21, Transforming growth factor-beta, Inflammatory response