

Interleukin-17 Gene Expression and Serum Levels in Asthma

Doaa A Eltaweel¹, Kamal M Hanna¹, Mohamed A El Nady², Alaa M Awad¹, Yasmine S. Elkholy¹

Departments of ¹Medical Microbiology & Immunology and ²Chest Diseases Faculty of Medicine, Cairo University, Egypt

Asthma is one of the most common chronic respiratory diseases. It is associated with significant morbidity and shows an increasing prevalence over time. Accumulating evidence suggests that interleukin (IL)-17 has a key role in severe asthma. The aim of the study was to determine quantitatively gene expression of IL-17 in peripheral blood mononuclear cells (PBMC) & the level of IL-17 in the serum of asthmatic patients, to correlate the level of IL-17 with the severity of asthma and to compare between gene expression of IL-17 and its serum level. Forty (40) asthmatic patients were enrolled and subdivided into 2 subgroups; controlled & uncontrolled asthma according to GINA, 2014. In addition, twenty (20) healthy control subjects were included. Blood samples were subjected to real time PCR assays for IL-17 mRNA gene expression and serum was tested by ELISA for estimation of IL-17 serum levels. Significant higher serum IL-17 levels were found in patients with uncontrolled asthma compared to patients with controlled asthma and healthy control group. Mean serum IL-17 value was 87.24 pg/ml in uncontrolled asthma, 75.9 pg/ml in controlled asthma and 47.0 pg/ml in healthy group ($P= 0.00$). IL-17 mRNA gene expression levels ($\Delta\Delta Ct$) were also significantly elevated in uncontrolled asthma compared to patients with controlled asthma and healthy control group. Mean IL-17 mRNA gene expression levels were 33.7 units in uncontrolled asthma, 7.0 in controlled asthma and 0.30 in healthy group ($P=0.00$).