

Evaluation of serum levels of Fatty acid binding protein 4 and IL-6 in exacerbation phase of COPD patients

Abstract

Background and objective: The serum fatty acid binding protein 4 (FABP-4) level increases in chronic inflammatory diseases. The present study aimed to examine serum FABP-4 and interleukin (IL)-6 levels in patients with stable and acute exacerbation of chronic obstructive pulmonary disease (COPD) and the correlation of these markers with airflow limitation.

Methods: We measured serum FABP-4 and IL-6 levels in 60 COPD patients (30 stable COPD (SCOPD), and 30 acute exacerbation of COPD (AECOPD)), and 30 healthy subjects and compared them with airflow limitation according to the COPD stage in the Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) criteria, peripheral O₂ saturation (SpO₂), and COPD Assessment Test (CAT) score. We also tested the association between serum FABP-4 levels and clinical parameters.

Results: Both serum FABP-4 and IL-6 levels increased with increasing severity of airflow limitation in SCOPD and AECOPD groups ($P < 0.01$ and $P < 0.001$, respectively). Also, serum FABP-4 level increased in patients with AECOPD group compared with SCOPD group in GOLD stages I-II ($P < 0.01$). In addition, there was a significant positive correlation between serum FABP-4 level with IL-6, CAT score and smoking history and inversely with forced expiratory volume in 1 second (FEV1) and SpO₂.

Conclusion: The study revealed that serum FABP-4 level was elevated with increasing severity of airflow limitation in COPD patients, markedly in acute exacerbation phase. The increase was associated with diminished quality of life and severity of hypoxia. Thus, inhibition of serum FABP-4 levels may be useful in managing the COPD patients.

Keywords: Chronic Obstructive Pulmonary Disease, Fatty Acid Binding Protein 4, Interleukin-6, Airflow limitation.