

Abstract

Background: COPD (Chronic Obstructive Pulmonary Disease) is an airway disease that is usually progressive and is one of the leading causes of death and disability. Follistatin-like protein 1 (FSTL1), is a factor whose secretion is regulated by stress and inflammation and activates the NF- κ B pathway as a proinflammatory factor. HIF-1 α is another factor produced by COPD-induced hypoxia in the body. Studies have shown that FSTL1 levels increase in various diseases such as asthma, rheumatoid arthritis, lupus, and heart failure.

Aim: Determination of serum levels of FSTL1, NF- κ B, and HIF-1 α in patients with COPD and comparison with control group.

Materials and Methods: This case-control study was selected on 45 men with COPD and 45 healthy men with no complaints of cough, sputum, and shortness of breath and no known chronic disease. The parameters were measured included pulmonary function tests (FEV1, FVC, and FEV1/FVC), GOLD stages, COPD assessment test (CAT score), mMRC, and biochemical analysis (FSTL1, NF- κ B, and HIF-1 α).

Results: Serum levels of HIF-1 α , NF- κ B and FSTL1 were higher in patients with COPD compared to healthy individuals and significantly higher in severe disease based on GOLD criteria. Also, serum FSTL1 level was negatively correlated with pulmonary function test and positively correlated with serum levels of NF- κ B and HIF-1 α .

Conclusion: The results indicated that FSTL1 may be a proinflammatory marker in COPD patients and can be considered therapeutic targets.

Keywords: COPD, FSTL1, HIF1 α , NF- κ B