

# SERUM LEVEL OF TRANSFORMING GROWTH FACTOR- $\beta_1$ IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS CORRELATION WITH CLINICAL AND FUNCTIONAL INDICES

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## Abstract

Currently, much attention is devoted to biomarkers of inflammation and fibrosis in COPD patients both in lung tissue and blood serum. One of them, transforming growth factor- $\beta_1$  (TGF- $\beta_1$ ), plays a central role in structural changes of the bronchial wall, leading to irreversible airway obstruction.

*Aim* was to determine the serum level of TGF- $\beta_1$  in COPD patients and its correlation with clinical and functional indices.

*Materials and methods.* We examined 37 COPD patients using clinical methods. TGF- $\beta_1$  level was measured by enzyme-linked immunoassay.

*Results.* We found that plasma level of TGF- $\beta_1$  was significantly elevated in COPD patients compared with healthy controls: 7697,77 [4294,35–16269,50] pg/ml vs 2620,50 [2267,74–2976,20] pg/mL. The level of TGF- $\beta_1$  depended on COPD severity; the lowest level was observed among COPD patients with stage II, and the highest in patients with stage IV of the disease. Increased serum TGF- $\beta_1$  level correlated with smoking index in pack/years ( $r = 0,369$ ,  $p = 0,026$ ), indicating the influence of cigarette smoking duration on serum TGF- $\beta_1$  level.

*Conclusions.* We found elevated plasma TGF- $\beta_1$  level in 59,45 % of COPD patients. The level of TGF- $\beta_1$  depended on disease severity and duration of cigarette smoking. Serum level of TGF- $\beta_1$  negatively correlated with number of exacerbations in the previous year.

**Key words:** chronic obstructive pulmonary disease, transforming growth factor- $\beta_1$ .

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