

CLINICO-INFLAMMATORY ISSUES OF COMORBID VIBRATION  
DISEASE AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN  
WORKERS FROM MECHANICAL ENGINEERING

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Vibration disease (VD) takes one of the leading places in the structure of occupational diseases in the whole world. It often combines with chronic obstructive pulmonary disease (COPD), which also is an actual healthcare problem due to its prevalence, progressive course and mortality. Today one of the pressing problems of medicine is to study the role of cytokines in the pathogenesis of various diseases, because they have a wide spectrum of biological activity and they are regulators of intercellular interactions. Despite the number of studies published concerning VD and COPD, the cytokine profile of their combined course is not yet clear.

The purpose of this study was to evaluate the content of cytokines TNF- $\alpha$  and IL-10 in patients with VD and VD, combined with COPD.

**Materials and Methods.** The study involved 118 men who suffered from VD caused by local vibration. The average age of examined patients was  $52,3 \pm 0,81$  years, working experience of contact with the local vibration was  $19,13 \pm 0,61$  years. The main group included 66 patients with COPD and VD. 52 patients with isolated course of VD formed the group comparison. The control group consisted of 20 healthy men. The content of cytokines TNF- $\alpha$  and IL-10 in blood was determined by immunoassay analyzer for Stat Fax 2100 (USA) using reagent kits according to the instructions of the manufacturer "Vektor Best" (Novosibirsk, Russia). Statistical analysis of the results was performed with software Statistica 8.0 for Windows.

**Results.** Determination of the inflammatory cytokine TNF- $\alpha$  showed increasing its concentration in the examined persons. Hereby, the content of TNF- $\alpha$  in patients with VD was significantly higher than in the control group ( $67,99 \pm 4,53$  pcg/ $10^6$  against  $42,59 \pm 1,98$  pcg/ $10^6$ ;  $p < 0,05$ ). The level of inflammatory cytokine was more expressed in patients with combined pathology ( $86,27 \pm 4,91$  pcg/ $10^6$ ) than in patients with isolated course of VD. Decreasing anti-inflammatory cytokine IL-10 occurred in both groups compared with the controls. Level of interleukin in the group comparison was  $28,54 \pm 2,23$  pcg/ $10^6$  that was lower than in the control group -  $33,04 \pm 2,51$  pcg/ $10^6$ . The maximum decrease of IL-10 observed in the main group -  $22,18 \pm 1,65$  pcg/ $10^6$ .

**Conclusions.** Obtained data showed imbalance in cytokine profile in patients with VD, but more significant changes were found in the examined with accompanying COPD.

## **ЗАЯВКА**

на участь у V Міжнародному науковому міждисциплінарному конгресі  
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**Назва доповіді:**

Clinico-inflammatory issues of comorbid vibration disease and chronic obstructive pulmonary disease in workers from mechanical engineering

**Бажана форма участі:** публікація тез та усна доповідь

**Бажана секція:** терапія

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