

SERUM LEVELS OF APOPTOSIS-RELATED MARKERS (P53, BCL-2, SFAS-L, CASPASE-9) IN COPD PATIENTS

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Introduction. Apoptosis is a complex process of regulated and programmed cell death. In this process, the activation of many genes and signaling pathways is involved. Apoptosis provides a protective function due to the elimination of autoreactive immune cells and thus limits the destruction of their own cells and tissues. Of great interest is the study of the influence of apoptosis on a variety of pathological processes.

Chronic obstructive pulmonary disease (COPD) is characterized by persistent airflow limitation that is usually progressive and associated with an increased chronic inflammatory response of the lungs to the action of pathogenic particles or gases. In 80-90% of patients with COPD, the disease develops in the background of tobacco smoking. As it is known, the violation of apoptosis of lung epithelial and endothelial cells, neutrophils, lymphocytes, myelocytes are in smokers' and patients with emphysema.

The aim of this study was to examine the contents of markers of apoptosis (p53, sFas-L, Bcl-2 and caspase-9) in the serum of patients with COPD.

Methods. Proapoptotic (p53, sFas-L, caspase-9) and anti-apoptotic (Bcl-2) proteins were studied in 68 people: 33 - patients with COPD and 35- control group. In serum concentration of proteins was determined by enzyme-linked immunosorbent assay (ELISA) using kits (Bender MedSystems GmbH, Austria). The color intensity indicating the concentration of the protein was measured using Microplanshet Reader (BiolabSystem) at a wavelength of 450 nm. Concentrations of bcl-2, p-53, sFASL and caspase -9 were determined by a standard curve based on the finished preparations of protein bcl-2, p-53, sFASL and caspase-9.

Results. In the serum of COPD patients' was found significant decrease concentration of sFASL and p53 proteins compared with control group. The content of bcl-2 protein and caspase-9 in COPD patients did not show any difference from control group. We traced concentration dependence of these proteins on the severity of disease.

Conclusion. Apoptosis is a highly regulated process, which involves a large number of different proteins. The mechanisms which control apoptosis act differently in different populations of cells. Elucidation of pathological factors leading to disruption of this process in COPD will contribute to the development of new therapeutic approaches to this widespread and severe disease.