

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



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RENAL BLOOD FLOW AND LIVER INFLAMMATION IN THE HEPATORENAL SYNDROME

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Introduction. Hepatorenal syndrome (HRS) is a relatively common complication of cirrhosis and occurs in 39% of cirrhosis patients within five years since the diagnosis has been made. Generally accepted theory is that blood vessels of kidneys constrict because of the dilation of blood vessels in the visceral circulation, which is caused by factors of the liver disease. Histamine, prostaglandins, and nitrous oxide (NO) affects unstriated muscle structure of vessels, causing the dilation of blood vessels, which increases the blood flow and circulating leukocytes in it. But the role of inflammatory cytokines in the pathogenesis of hepatorenal syndrome is still under the study.

Objectives. The objective of the study was to analyze the impact of liver inflammation on the renal hemodynamic disorders in HRS.

Material and methods. We examined 90 patients in total: 30 – with alcoholic liver cirrhosis (ALC)+normal renal function (group 1); 30 ALC+renal failure, but without HRS criteria (group 2); and 30 ALC+HRS (group 3). We measured IL-6 and TNF- α levels in the blood serum by the kits of Immunoassay Cytoscreen (Biosource International, Camarillo, CA, USA), and NO level by Griess reaction. The index of interlobar arterial resistance (IARI) was estimated with the data of duplex dopplerography.

Results. The mean value of IARI in group 3 (0.76 ± 0.02) was statistically higher than in group 1 (0.64 ± 0.04) and group 2 (0.68 ± 0.01) ($p<0.05$).

The numbers of NO were the highest in group 3 – 28.5 ± 3.2 mmol/L in comparison with 16.2 ± 2.5 mmol/L in group 1. There was no statistically significant differences between NO levels in groups 1 and 2 (17.6 ± 2.3 mmol/L) ($p>0.05$).

TNF- α levels in the blood serum were significantly overstated in group 3 – 2.79 ± 0.68 pg/mL ($p<0.05$) in comparison with 1.89 ± 0.34 pg/mL - in group 2 and 1.89 ± 0.34 pg/mL – in group 1.

Group 3 also revealed the high level of IL-6 – 15.35 ± 0.93 pg/mL ($p<0.05$), while in group 1 and 2 it was 12.39 ± 1.07 pg/mL and 11.64 ± 1.32 pg/mL respectively.

Spearman's rank correlation analysis revealed the direct correlation between IARI and NO in the blood serum ($r=0.86$), IARI and levels of TNF- α in the blood serum ($r=0.73$), IARI and IL-6 in the blood serum ($r=0.67$) ($p<0.05$).

Conclusions. Thus, this paper proves that proinflammatory cytokines, including TNF- α , IL-6 and NO, play a key role in the pathophysiology of HRS. The identification of serum levels of these cytokines, along with the routine biochemical and ultrasound examination, can help in early detection of renal hemodynamic disorders in patients with ALC even before renal dysfunction becomes clinically evident. It also makes the identification of a subgroup of ALC patients who have higher risks for HRS progression possible.

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ASSESSMENT OF INDICATORS OF MELATONIN AND GHRELIN CONCENTRATIONS IN THE BLOOD SERUM OF PATIENTS WITH ARTERIAL HYPERTENSION COMBINED WITH OSTEOARTHRITIS

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Introduction. Diseases such as arterial hypertension (AH) and osteoarthritis (OA), which are common among the global population, are often combined. The combined course of these diseases is an important medical and social problem even in economically developed countries. In this regard, researchers are now paying considerable attention to the biochemical and molecular mechanisms underlying the development of hypertension and OA. Their efforts are aimed at identifying these diseases as early as possible and prescribing adequate complex therapy.