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THE CURRENT STATE OF DEVELOPMENT OF WORLD SCIENCE: CHARACTERISTICS AND FEATURES

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SECTION 19.
PSYCHOLOGY AND PSYCHIATRY

SECTION 20.
MEDICAL SCIENCES AND PUBLIC HEALTH

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CHANGES OF ENDOTHELIAL FUNCTION INDICES AND PRO-INFLAMMATORY CYTOKINES LEVEL IN COMORBID COURSE OF ESSENTIAL HYPERTENSION

It should be noted that the peculiarity of internal pathology at present time is its comorbidity [1, 2], besides essential hypertension (EH) sintropy worsens disease on the whole [3, 4]. Combination of EH with duodenal peptic ulcer (DPU) is frequent. It can complicate diagnostics, modify clinical symptoms and worsen treatment quality [7]. The study aimed to identify the features of the changes of endothelial function parameters and pro-inflummatory cytokines level in patients with EH and comorbid DPU.

Totally 55 patients (30 males and 20 females) with second stage of EH (medication control) were examined; 32 of them had isolated EH (comparison group) and 33 patients (main group) had EH in combination with DPU (remission period). The study population had a mean age of 44,3±2,9 years. Reference indicators were obtained while studying 23 practically healthy individuals, sex and age of whome did not differentiate with those of examined patients.

Spectrophotometrical method was used to evaluate the indices of endothelial function: the level of ultimate stable metabolites of nitrogen oxide – nitrites (NO_2), nitrates (NO_3), their total content (NO_x) in blood serum and risk-marker of thrombogenic complications (according to ristomycin-induced platelet aggregation (RIPA) [5, 9]. Blood test for pro-inflammatory (TNF-α, IL-1β, IL-6) cytokines (Ck) was conducted by immunoenzyme method.

Processing of the obtained data was carried out using Microsoft Office 2003 licensed programs, Microsoft Excel Stadia 6.1/prof. For all indicators, the probability of differences between groups of studied patients is defined as: * -p<0.05, ** -p<0.01, *** -p<0.001; the differences between the sick study groups and practically healthy individuals are defined as: ▲ -p<0.05, ▲▲ -p<0.01, ▲▲▲ -p<0.001.

Present study revealed that patients with comorbid EH (compared to reference data) had 1.5▲▲▲ times decreased level of NO_2, 1.6▲▲▲ times decreased level of NO_3 and 1.6▲▲▲ times decreased NO. Unlike patients with isolated course of EH, in EH comorbidity RIPA not only exceeded 1.45▲▲▲ times reference data and 1.12✳ times index of the comparison group, but also the physiological threshold of this index on the whole, and, moreover, the inverse correlation was found between RIPA and NO_x ($r = -0.27$; $p<0.01$).

In patients of the main group an essentially increased level (in comparison with reference data) of pro-inflammatory Ck was revealed - TNF-α (2.6▲▲▲ times higher), IL-1β (2.3▲▲▲ times higher) and IL-6 (1.6▲▲▲ higher). Noteworthy that absolute content of proinflamamtory Ck in the patients of the main group had been higher than in the comparison group: TNF-α – 1.5✳✳✳ times higher, IL-1β – 1.4✳ times higher, IL-6 – 1.3✳ times higher. Patients of the main group had negative correllations between TNF-α and NO_x, IL-1β and NO_x ($r = -0.30$ and $r = -0.28$ accordingly; $p<0.01$) and their severity was higher than in patients of comparison group ($r = -0.27$ and $r = -0.24$ accordingly; $p<0.01$). Direct correlation was found between TNF-α and RIPA ($r = +0.28$; $p<0.01$) as well as between RIPA and IL-1β ($r = +0.26$; $p<0.05$), they were more pronounced than in patients of the comparison group ($r = +0.25$ and $r = +0.22$ respectively; $p<0.05$).

Thus, patients with EH in conditions of comorbid course with DPU have decrease contents of nitroxide and increase of pro-inflammatory cytokines level in blood serum. Presence of correlation relationships between pro-inflammatory Ck and indices of endothelial dysfunction, pro-inflammatory Ck and risk-marker of thrombogenic complications should be considered as burdening criterion in conditions of comorbid course of EH and DPU and should be taken into account when stratifying cardiovascular risk.

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