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MYOCARDIAL INFARCTION ON THE BACKGROUND OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Resume. In recent decades, the issues of comorbidity in the clinic of internal diseases are a serious problem of practical health care. Comorbid conditions in the clinic of internal diseases are of great interest from researchers due to the increasing prevalence mutually burdensome of disease, changes in the clinical picture of a disease under the influence of another and worsening of prognosis.

One of these markers is homocysteine. It is established that an increase in the concentration of homocysteine - hyperhomocysteinemia, is of leading importance in the pathogenesis of the development and progression of atherosclerosis, coronary heart disease, chronic obstructive pulmonary disease, etc.

Key words: homocysteine, hyperhomocysteinemia, comorbidity, chronic obstructive pulmonary disease, ECG, blood plasma.

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ИНФАРКТ МИОКАРДА НА ФОНЕ ХРОНИЧЕСКОЙ ОБСТРУКТИВНОЙ БОЛЕЗНИ ЛЕГКИХ

Резюме. В последние десятилетия вопросы коморбидности в клинике внутренних болезней представляют собой серьезную проблему практического здравоохранения. Коморбидные состояния в клинике внутренних болезней вызывают большой интерес со стороны исследователей, ввиду увеличения распространенности, взаимоотягощающего течения заболеваний, изменения клинической картины одного заболевания под влиянием другого и ухудшения прогноза.

Одним из таких маркеров является гомоцистеин. Установлено, что увеличение концентрации гомоцистеина - гипергомоцистеинемия, представляет ведущее значение в патогенезе развития и прогрессирования атеросклероза, ишемической болезни сердца, хронической обструктивной болезни легких и т.д.

Ключевые слова: гомоцистеина, гипергомоцистеинемия, коморбидности, хронической обструктивной болезнью легких, ЭКГ, плазме крови.

The relevance of the problem. In recent decades, the issues of comorbidity in the clinic of internal diseases are a serious problem of practical health care. Comorbid conditions in the clinic of internal diseases are of great interest from researchers due to the increasing prevalence mutually burdensome of disease, changes in the clinical picture of a disease under the influence of another and worsening of prognosis.

It is known that chronic obstructive pulmonary disease is now considered not only as a disease of the respiratory tract and lungs, but also as a systemic disease. According to large population studies, the risk of death from cardiovascular disease in patients

with chronic obstructive pulmonary disease, it is increased by 2 times and accounts for approximately 50% of the total number of deaths. Also, a number of studies have shown that the mortality of patients with chronic obstructive pulmonary disease is largely due to myocardial infarction, which confirms the relevance of studying cardiopulmonary comorbidity: myocardial infarction against the background of chronic obstructive pulmonary disease. All this requires the need to search for new mutually aggravating risk factors and highly predictive pathogenetic markers of the course of myocardial infarction in patients with chronic obstructive pulmonary disease.

One of these markers is homocysteine. It is established that an increase in the concentration of homocysteine - hyperhomocysteinemia, is of leading importance in the pathogenesis of the development and progression of atherosclerosis, coronary heart disease, chronic obstructive pulmonary disease, etc.

In connection with all of the above, the relevance of studying hyperhomocysteinemia in cardiopulmonary comorbidity: myocardial infarction against the background of chronic obstructive pulmonary disease is beyond doubt.

The purpose of the study. To study the level of homocysteine and the frequency of hyperhomocysteinemia in patients with cardiopulmonary comorbidity: myocardial infarction against the background of chronic obstructive pulmonary disease.

Material and methods of research. 146 people were examined, which comprised the following groups : Group I-patients with myocardial infarction (n=30); Group II-patients with cardiopulmonary comorbidity: myocardial infarction against the background of chronic obstructive pulmonary disease (n=54); group III - patients with chronic obstructive pulmonary disease (n=32) and control group - 25 somatically healthy individuals of the Andijan region (n= 30).

The diagnosis and treatment of acute myocardial infarction were based on the clinical recommendations "Acute ST-segment elevation myocardial infarction electrocardiograms: rehabilitation and secondary prevention" 2014. The diagnosis of chronic obstructive pulmonary disease and the stage of the disease were established according to the clinical recommendations presented by the program "Global Strategy for the Diagnosis, Treatment and Prevention of Chronic Obstructive Pulmonary Disease" (revision 2019).

Criteria for inclusion in the study: the presence of documented ST-segment elevation myocardial infarction in patients no more than 12 hours after the angina attack, confirmed by ECG results, serum markers of necrosis, and the presence of a history of chronic obstructive pulmonary disease, age up to 64 years. In the study patients with myocardial infarction, which was a complication of percutaneous coronary intervention or coronary bypass surgery, as well as patients with end-stage renal failure (glomerular filtration rate less than 30 ml/min) and diagnosed oncological diseases were not included. To learn the level Homocysteine in the subjects was used by the method of enzyme immunoassay, using the commercial test system " Axis Homocysteine "("Axis-shield Diagnostics Ltd", Great Britain).
Written consent was received from all patients and somatically healthy individuals. Informed consent to participate in the study.

Statistical data processing was performed using the program Statistica 12.0 ("StatSoft, Inc.", USA). For each indicator, the Me (5 and 95 percentiles) was calculated.To identify statistical differences between the studied phenomena, the level of statistical significance p was used. At $p < 0.05$, the differences were considered statistically significant, and at $p > 0.05$, the differences were statistically insignificant.

Results of the study: In somatically healthy individuals, the median homocysteine level was 10.5 mmol /L with inter-percentile ranges (6.2; 14.7). In the

group of patients with myocardial infarction, the median homocysteine level was 13.4 (7.4; 25.4) mmol / L, which was statistically significantly higher than in the control group ($p = 0.031$). In the group of patients with chronic obstructive pulmonary disease, the median homocysteine level was 33.6 (7.1; 44.4) mmol / L, which was statistically significantly higher than in the group of somatically healthy individuals ($p = 0.001$) and in the group of patients with myocardial infarction ($p = 0.012$). The combination of myocardial infarction on the background of chronic obstructive pulmonary disease homocysteine level was 44.5 μmol /l (7,5; 52), which was statistically significantly higher in comparison not only with group somatically healthy individuals ($p < 0.001$), but with a group of patients with myocardial infarction ($p < 0.001$), and patients with chronic obstructive pulmonary disease ($p = 0.002$).

Conclusions: In patients with myocardial infarction, chronic obstructive pulmonary disease, as well as in patients with myocardial infarction against the background of chronic obstructive pulmonary disease, an increase in the level of homocysteine was found in comparison with a group of somatically healthy individuals. It was found that patients with a combination of myocardial infarction with chronic obstructive pulmonary disease have the highest increase in the concentration of homocysteine in blood plasma compared to patients with both myocardial infarction and chronic obstructive pulmonary disease.

When analyzing the frequency of hyperhomocysteinemia among the examined patients, the predominance of the number of patients with hyperhomocysteinemia in the group with chronic obstructive pulmonary disease and myocardial infarction against the background of chronic obstructive pulmonary disease was revealed.

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