СЕКЦІЯ XVII. МЕДИЧНІ НАУКИ ТА ГРОМАДСЬКЕ ЗДОРОВ'Я

CONTRASTIVE EXAMINATION OF THE CLINICAL TRAJECTORY OF COVID-19 IN THE PRESENCE OF CARDIOVASCULAR DISEASES

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Summary. *In recent decades, public health has faced a series of significant challenges, particularly concerning cardiovascular diseases (CVD). World Health Organization data over the past three decades present alarming statistics: the prevalence of cardiovascular diseases (CVD) has more than doubled, reaching a level of 523 million cases compared to 271 million cases 30 years ago, which is a truly staggering indicator. Additionally, the number of deaths from CVD is impressive, totaling 18.6 million (17.1-19.7 million), indicating an urgent need for a deep understanding and overcoming of this issue [1, 2, 3]. In the context of contemporary challenges and threats related to public health, special attention is given to the impact of COVID-19 on the cardiovascular system. As emphasized in numerous scientific studies, coronavirus infection poses a serious threat to patients with pre-existing chronic conditions, including cardiovascular system involvement [4, 5, 6]. It is worth noting that the combination of COVID-19 and cardiovascular pathology presents the medical community with a series of complex challenges, including difficulties in diagnosis, treatment strategies, and the choice of patient management tactics in acute conditions [7, 8]. However, despite the relevance of the issue, there is a significant lack of clinical data regarding the interaction between CVD and COVID-19. This underscores the need for further research and improvement of approaches to the diagnosis and treatment of patients with a combination of these conditions. Therefore, in this article, we aim to analyze the existing issues, identify key challenges, and propose possible avenues for optimizing clinical practice in this area by examining the characteristics of the clinical course of COVID-19 in conjunction with cardiovascular pathology.*
Keywords: *COVID-19, SARS-CoV-2, cardiovascular system, clinical course, comparative analysis*

Purpose of the study: to study the features of the clinical course of COVID-19 in combination with the pathology of the cardiovascular system (CVS).

Materials and methods of research. A prospective study was conducted, including cases of COVID-19 admitted for inpatient treatment from March 2021 to February 2022 at the Republican Specialized Hospital Zangiota-1 in Tashkent, Uzbekistan. The detection of COVID-19 was carried out based on PCR analysis (determination of the presence of the virus), assessment of clinical status, and the use of computer tomography. The main group (n=150) included patients with newly detected cardiovascular system changes after COVID-19 infection and patients with exacerbation of pre-existing cardiac pathology in the context of COVID-19. Importantly, the identified cardiovascular changes persisted throughout the acute period of COVID-19 illness. The comparison group (n=154) included patients with COVID-19, but without any significant concomitant cardiac pathology. The

average age of patients in the main group was 67.7±6.2 years (from 47 to 86 years), in the comparison group – 66.1±8.3 years (from 48 to 88 years). The study groups were representative and did not differ statistically in the nature of COVID-19 symptoms and the degree of lung involvement.

Results of the study: Among cardiovascular pathology progressing or newly emerging in the context of COVID-19 infection, in the majority of cases, arterial hypertension of II-III degree (60.0%), ischemic heart disease (IHD) in the form of angina of II (48.7%) and III class (48.0%), and arrhythmias (23.3%) were diagnosed.

Echocardiographic abnormalities included right ventricular dysfunction (22.7%), left ventricular contractility disorders (18.7%), with decreased ejection fraction (17.3%), diastolic dysfunction (14.0%), and "myocardial damage" (7.3%).

The most significant risk factors were the presence of a burdened medical history (RR=10.39), elevated body mass index over 30 (RR=2.63) and diabetes mellitus (RR=1.55).

In patients with COVID-19 in combination with CVS pathology, a relatively high incidence of acute onset (64.0% vs 44.2%; $p<0.001$), respiratory failure (83.7% vs. 62.0%; $p<0.001$), admission to the intensive care unit (25.3% vs 11.7%; $p=0.004$), development of acute respiratory distress syndrome (20.0% vs 9.1%; $p=0.012$), hospital mortality (10.7% vs 2.7%; $p=0.006$).

Conclusion. Cardiac manifestations of COVID-19 include focal or global myocardial inflammation, ventricular dysfunction, heart failure, and arrhythmia. A high frequency of acute onset of the disease, respiratory failure and hospital mortality is determined.

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