МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА
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MYOCARDIAL INFARCTION RATES DURING THE PANDEMIC AND THE PRE-PANDEMIC PERIOD

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Relevance. The recent and ongoing coronavirus pandemic has taken over almost the entire world. Despite the severity of the COVID-19 problem, mortality from this disease is in no way comparable to mortality from cardiovascular disease (CVD), which remains the leading cause of death among the population. Of course, the increase in mortality directly and indirectly depends on the clinical forms of this virus [1, 3, 4].

COVID-19 can cause additional damage to the cardiovascular system, which contributes to the development of complications and exacerbation of coronary artery disease. Furthermore, the choice of priority tactics in the diagnosis of COVID-19 and a combination of cardiovascular pathology and the treatment of patients in emergency situations poses a number of challenges [5, 6].

The new strain of the SARS-CoV-2 coronavirus is a single-stranded RNA virus phylogenetically similar to another SARS-CoV coronavirus, causing 10% of deaths among patients diagnosed with SARS in 2003[7]. It is known that COVID-19 is especially severe in elderly people, as they are the most common causes of various cardiovascular diseases, arterial hypertension (AH), and chronic heart failure (CHF). Therefore, there is reason to believe that the COVID-19 pandemic can lead to an increase in the mortality rate from heart failure in these patients. Comparative assessment of myocardial infarction cases in the pandemic and pre-pandemic periods.

Objects and methods of verification

Our research was conducted at the Namangan Regional Branch of the Republican Center for Emergency Medical and Scientific-Practical Cardiology. Based on a retrospective analysis, the scientific study involved

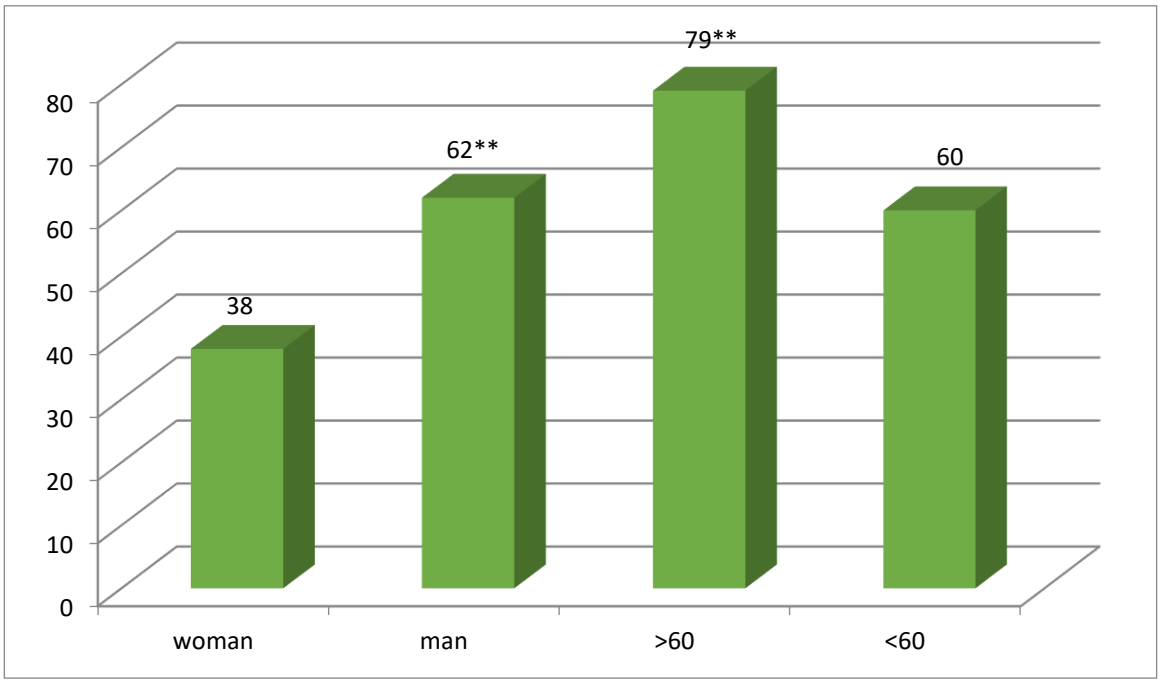
304 patients hospitalized with a diagnosis of myocardial infarction before and during the pandemic. Of these, 139 patients were patients with myocardial infarction in the pre-pandemic period, and 165 were patients with myocardial infarction during the pandemic period. Of the 165 patients, 61 had myocardial infarction (MI) and COVID-19, while 104 had only MI. Of the 139 patients, 86 (62%) were male and 63 (38%) were female. Of the 165 patients with MI registered in the context of the pandemic, 98 (68%) were men and 67 (32%) were women.

Of the patients, 203 (49.7%) were transported to the hospital by ambulance, while 101 (33%) were transported by their own vehicle. The average age of the patients examined ranged from 48 to 75 years. The diagnosis of myocardial infarction was made in accordance with the recommendations of the European Society of Cardiologists in 2018. Retrospective studies covered the period before the pandemic, that is, from December 2018 to December 2019, while the study conducted during the pandemic covered the period from January 2020 to January 2022. Special maps were created for the patients involved in the study. The card included the following indicators: passport part, complaint, medical history, duration of the illness, comorbidities, laboratory and instrumental studies. The data obtained during the study was statistically processed on a Pentium IV personal computer using the Microsoft Office Excel - 2013 software package, including the use of internal statistical processing functions, as well as the use of the STATISTICA-6.0 software package.

Analysis of the results obtained

Using the retrospective method, we analyzed the number of patients hospitalized with myocardial infarction, according to which the total number of patients in the pre-pandemic period was 139. Of these, 86 (62%) were men and 63 (38%) were women. Our analysis of patients by age showed that 79 (57%) were elderly patients over 60 years old and 60 (43%) were middle-aged patients. Thus, men with myocardial infarction before the pandemic had a significantly higher rate of 36.5% ($p<0.01$) than women, while those over 60

years old had a 32% ($p<0.01$) higher rate than those under 60 years old (Figure 1).

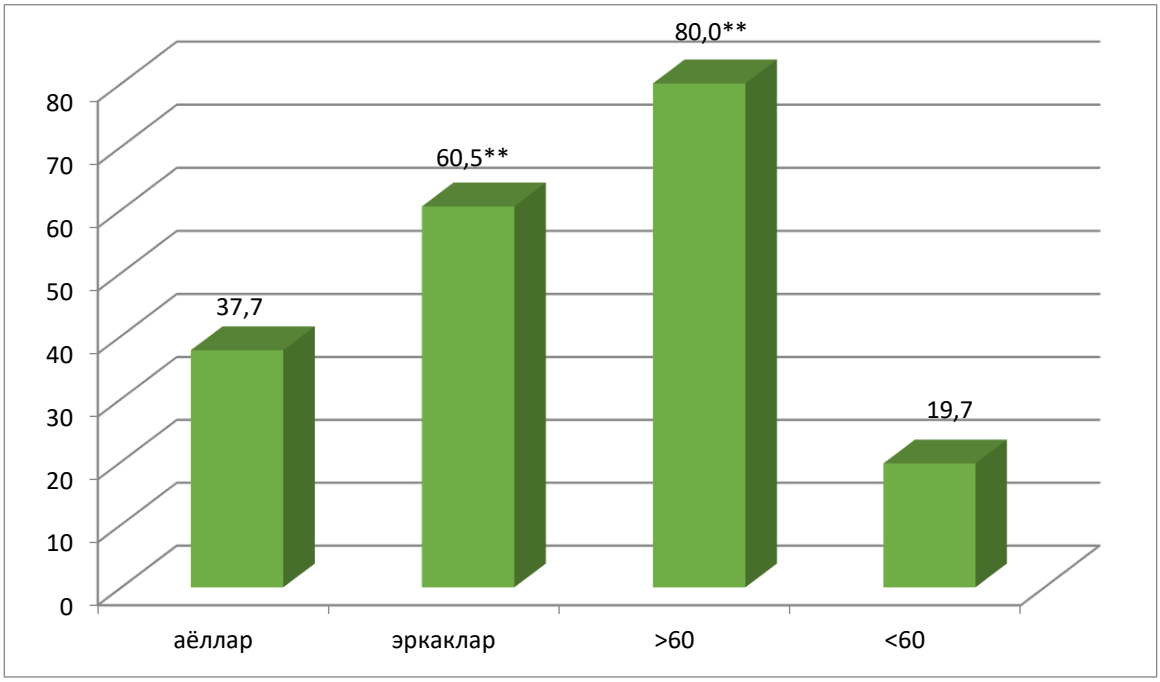


Appendix: **p<0.01 significant intergroup indicator

Figure1. Analysis of patients with MI in the pre-pandemic period by age and gender (%)

During the pandemic, the number of patients with myocardial infarction increased to 165, while before the pandemic, their number was 139, meaning the number of patients increased by 19%. Of the 165 patients, 61 (37%) had the virus, while the remaining 104 (63%) had no confirmed viral infection.

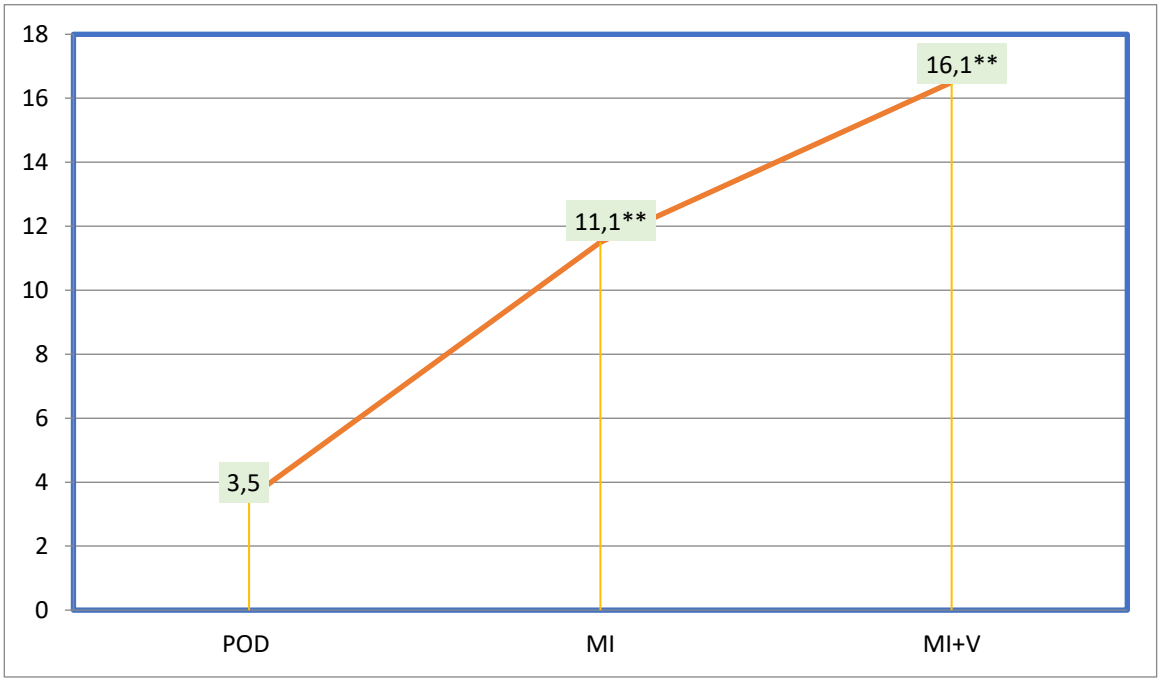
Of the 61 patients in the MI+B group, 49 (80%) were elderly, while 12 (19.7%) were middle-aged. In our analysis of patients in terms of gender, out of 61 patients with MI+B, 23 (37.7%) were female and 38 (60.5%) were male (Figure 2). During the COVID-19 pandemic, the time for seeking emergency medical care for patients without coronavirus infection was 11.1 ± 3.3 hours, while in the pre-pandemic period it was 3.6 ± 1.1 hours (33%, ($p<0.01$) compared to the pre-pandemic period).



Appendix: **p<0.01 significant intergroup indicator

Figure 3.1.2 Analysis of patients with MI during the pandemic by age and gender (%)

The data presented in the figure shows that even in the context of the pandemic, the incidence of myocardial infarction in patients with viral infection is 60% higher in men than in women (p<0.01), while in elderly patients it is 24.5% higher than in middle-aged patients (p<0.01). Through the retrospective method, we observed that patients who had not yet been infected with the virus were delayed in calling the emergency medical service during the COVID-19 pandemic. This significantly increases the time of coronary reperfusion, which in turn affects the spread of myocardial damage. The average time for our patients with viral infections and myocardial infarction to seek medical attention was 16.1 ± 3.1 hours (a difference of 22.5% (p<0.01) compared to the pre-pandemic period). As you can see, these results differed significantly from those before the pandemic. (Figure 3.)



Appendix: **p<0.01 significant intergroup indicator, POD - pre-pandemic period, MI - myocardial infarction, MI+V - myocardial infarction, and viral infection

Figure 3. Time of the patient's appeal to emergency medical care (hours)

Despite the more complex healthcare situation during the pandemic, the ambulance service has shown its effectiveness, but despite this, the average time for first-class calls has increased from 16 minutes to 36 minutes. We analyzed the reasons for the delay in seeking emergency medical care during the pandemic in patients with MI and not yet diagnosed with the virus, as well as in patients diagnosed with MI+V. Sixty-one patients with MI and viral infection responded to the question why they sought emergency medical care late: 11 (18%) sought emergency medical care by phone, but due to certain reasons, emergency medical care (EMC) remained late. Of course, during this period, emergency services focused on combating the virus, and most medical resources were directed towards combating the virus.

However, 31 (51%) responded that the reason for the delay in visiting doctors was the fear of being infected with the virus (VV), while 19 (31%)

responded that there were no vacancies in hospitals. During outpatient observation, we evaluated measures against modified cardiovascular disease risk factors in patients with a history of viral infection. We observed that data on modified risk factors for cardiovascular disease, namely: arterial hypertension, dyslipidemia, and diabetes mellitus, were included in the patient's outpatient chart. Extensive body weight or obesity were covered in outpatient charts as a diagnosis, but we witnessed that patients were not provided with enough information to correct it. The current blood pressure values of patients were reflected in the outpatient records of 53 (88%) out of 60 patients, but given the leading role of hypertension in the development of MI, such an important diagnostic indicator should have been recorded in all patients without exception. Blood pressure control can be assessed as unsatisfactory, as at the first visit of patients, the systolic blood pressure (SBP) value was 141.3±13.7 mmHg, while the diastolic blood pressure (DAP) value was 89.6±6.3 mmHg. It should be noted that. To determine the risk of cardiovascular disease and further treatment tactics, it is necessary to determine lipid metabolism in the blood. Based on the data we obtained, it can be said that doctors did not pay sufficient attention to the determination of blood lipids in patients. According to an analysis of outpatient records, outpatient records of only 35 (58.3%) out of 60 patients included blood lipid levels. However, it should be noted that only total cholesterol and triglyceride levels were studied in 11 (31%) of these 35 patients. In the population of patients we studied, average lipid levels were not only above the target level for patients who had experienced myocardial infarction, but also exceeded the target lipid level for individuals with a low risk of developing cardiovascular complications. Thus, the average value of total cholesterol (TC) in the examined patients was 6.6±1.1 mmol/L, T - 2.9±0.6 mmol/L, and LDL - 3.0±0.8 mmol/L. It is known that diabetes is the most important risk factor for the development of cardiovascular disease. Therefore, blood sugar monitoring is important not only in outpatient settings but also in inpatient settings. The outpatient records of our patients were insufficient for fasting blood glucose levels, which suggests that doctors did not pay sufficient attention to this risk factor.

In the course of the study, we noticed that blood sugar levels were mainly assessed in patients with a history of diabetes, how correct is this? Outpatient records of only 15 (25%) of our patients with MI and viral infection showed the value of sugar. Data on the determination of blood glucose and glycated hemoglobin in the studied population is only available in 3 (5.0%) patients. This is why serious attention is paid to patients with MI and viral infection, as these patients have a greater chance of developing adequate complications in the next stage of MI. It was in the post-COVID period that 63% (n=38) of our patients experienced depression. Our patients had both sides of fear, on the one hand they had experienced myocardial infarction, and on the other hand they had COVID-19. **Conclusion:** During the pandemic, the number of patients hospitalized with a diagnosis of myocardial infarction increased by 19% compared to the pre-pandemic period.The majority of patients with myocardial infarction were elderly and men.It was noted that patients with myocardial infarction delayed seeking emergency medical care during the COVID-19 pandemic.51% of patients with myocardial infarction delayed seeking emergency care due to fear of viral infection. Doctors paid very little attention to early detection of almost all major risk factors for cardiovascular diseases and of course, this situation does not affect the quality of pharmacotherapeutic correction of patients.

Literature:

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