

CARDIOVASCULAR DISEASES AS A RISK FACTOR FOR THE DEVELOPMENT OF SEVERE COVID-19

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ABSTRACT

The new coronavirus infection COVID-19 is characterized by an unpredictable course and a high incidence of severe lung damage with untimely and inadequate therapy. The new coronavirus infection COVID-19 is characterized by an unpredictable epidemiological process, and is also a global threat to human life and health. It can be assumed that there are certain conditions that affect the incidence, progression and severity of the new coronavirus infection.

KEYWORDS: *Infection, Diabetes Mellitus, COVID-19, Coronary Syndrome.*

INTRODUCTION

In the context of the COVID-19 (COroNaVirus Disease 2019) pandemic, the healthcare systems of all countries have faced a severe test. At the time of writing, according to Johns Hopkins University, this infection has been detected in > 103 million people worldwide, ~ 2.3 million of them have died.[one]. Despite the fact that the disease is asymptomatic, on average, in 50% of cases, and a mild course of the disease is observed in 80% of patients, a fairly significant proportion of those infected suffer severe COVID-19[2]. In the vast majority of studies, cardiovascular disease (CVD), arterial hypertension (AH), diabetes mellitus (DM), obesity are the main risk factors, and comorbidity is a key independent predictor of severe course and even death in COVID-19[3][four][5]. The course of the infectious process can serve as a cause of decompensation of chronic CVD, and provoke the onset of acute ones. Despite emerging seemingly optimistic statistics from around the world on a more than 40% drop in acute coronary syndrome (ACS) hospital admissions during the global lockdown, this decline may well be a warning sign of a potential increase in sudden cardiac death, worsening course of ACS, an increase in the number of complications in the future[6][7].

Purpose of the study. Assessment of cardiovascular diseases as a risk factor for severe COVID-19 among the working population on the example of Russian Railways. Material and methods. During the study, the main and control groups were formed. The main group included data from 2452 (n=2452) people from among the sick, for whom medical documentation was provided, from which the following information was obtained: outpatient or inpatient type of treatment, the severity of the inpatient course of the disease - mild, moderate or severe. The main group included 1615 men (65.8%) and 837 women (34.2%), the average age of patients was 41.0±10.4 years. The control group randomly included 2911 (n=2911) employees who did not become ill with COVID-19, comparable in age, gender, and area of residence. Of these, 2172 (74.6%) men

and 739 (25.4%) women, the average age of the subjects was 42.8 ± 10.7 years. An analysis was made of the frequency of occurrence of cardiovascular diseases in persons of the main and control groups. The frequency of occurrence of signs was compared using the χ^2 method.

Cardiovascular disease as a risk factor for the development of severe COVID-19 was assessed by univariate analysis.

Results

Significant factors of differences between the main and control groups were: gender and smoking. There was a tendency to associate the severe course of COVID-19 with the presence of cardiovascular diseases. As the severity of COVID-19 increases, a trend towards an increase in the incidence of cardiovascular disease has been established. The presence of other cardiovascular risk factors (male gender, smoking, obesity, diabetes mellitus) is significantly associated with a higher frequency of occurrence in the diseased group compared to those who were not ill.

CONCLUSIONS

Cardiovascular disease may be a significant risk factor for developing severe COVID-19 in the working population. Timely diagnosis, adequate correction of cardiovascular diseases can reduce the likelihood of developing a severe course of COVID-19.

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