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# COMORBIDITY AND ITS PROGNOSTIC SIGNIFICANCE IN PATIENTS WITH MYOCARDIAL INFARCTION MYOCARDIUM

**Summary.** MI is still an urgent medical and social problem. Due to the high socio-economic significance of this nosology, there is an increasing interest in studying the etiology, pathogenesis and clinical features of MI in young and middle-aged people. Despite a sufficient amount of literature data characterizing the etiopathogenesis of MI in general, the question of the significance of certain traditional risk factors in the formation of MI in young and middle-aged patients remains open. Currently, there are practically no studies devoted to the study of the structure and prognostic significance of comorbid conditions in this category of patients. There is a need to create original statistical models of risk stratification in young and middle-aged MI patients using "new" genetic and biochemical markers. However, the possibility of combining humoral and clinical-genetic markers to predict and stratify the risk of MI in young and middle-aged patients requires further study and is of independent practical importance for the development of effective programs for primary and secondary prevention of MI in this category of patients. One of the effective ways to obtain this kind of information is the creation of independent registries of patients who have had MI.

***Key words:*** modern cardiology, coronary heart disease, patients, cardioprotective therapy, comorbidity.

**Introduction.** An undoubted breakthrough in modern cardiology is the widespread introduction of reperfusion therapy methods, namely stenting of the coronary arteries. The use of these methods made it possible to reduce the risks of sudden death and acute heart failure, prevent cardiac arrhythmias, and, most importantly, reduce the area of myocardial necrosis [2]. However, it should be noted that the restoration of tissue perfusion in patients occurs differently, as well as the risk of complications. This phenomenon is most likely associated with the presence of various comorbidities. Myocardial infarction is an acute disease caused by the spread of one or more foci of ischemic necrosis in the heart muscle.

**Purpose of the study:** in patients with AMI, connection with the clinical course of the disease, the formation of myocardial necrosis, coronary circulation, the severity of the inflammatory response and the possibility of prevention through early revascularization of infarct-related CA and cardioprotective therapy.

**Material and Methods:** Currently, in the domestic and world medical literature, the problem of the associated course of diseases is given great attention. [3]. It is known that in real clinical practice, most patients are characterized by a combination of two or more diseases. The presence of several nosologies in one patient, the symptoms of which are frequent. For the first time, using the example of a regional vascular center, a register of patients, residents of the Perm Territory, who underwent myocardial infarction at a young and middle age, was formed. The study made it possible to identify age and gender characteristics of the prevalence of cardiovascular risk factors and concomitant nosologies in this category of patients. The structure of comorbidity is dominated by arterial hypertension (AH), anemia, diabetes mellitus (DM), diseases of the gastrointestinal tract. In the group of patients with early PCI, there was a significant increase in the proportion of patients with duodenal ulcer.

For patients who underwent MI before the age of 60 years, the prognostic significance of HI was established.

The absolute reproducibility in real clinical practice, the diagnostic and prognostic value of the neutrophil-lymphocyte index (NLI) for non-invasive diagnosis of coronary atherosclerosis in the absence of the possibility of emergency coronary angiography (CAG) has been proven.

Due to the high prevalence and social significance of CVD, the problem of comorbidity in this category of patients attracts the attention of many researchers [1]. According to available data, the most common comorbid conditions in patients with MI are hypertension (74.9%), diabetes (34.8%), CKD (21.7%), chronic obstructive pulmonary disease (18.2%), depression (18.2%) [5].

Despite the evidence that comorbidity is more common in older patients, and the number of associated nosologies increases with age, it is known that in people under 65 years of age, the presence of comorbidity is noted in 61.4% of cases. Thus, according to the recent Russian study REQUAZA, the incidence of comorbidity among young patients (under 45 years of age) was 47.2% [8].

Taking into account the current negative trend towards “rejuvenation” of MI, a comprehensive study of comorbidity in young and middle-aged patients and its impact on prognosis is an important area of scientific research. However, we have not found publications on this issue in the available domestic literature.

According to a number of large epidemiological studies, DM is an independent risk factor for CVD in both men and women. It has been established that CVD is observed in more than half of patients with DM and is the cause of death for most of them. For example, according to various data, the risk of MI in patients with DM is 6–10 times higher than in patients without DM [7].

To date, the mechanisms of the adverse effects of diabetes on the development of pathological changes in the macro- and microvascular bed have been well studied. The role of DM and hyperglycemia in the disruption of metabolic processes in the myocardium, the activation of free radical oxidation,

the development of DE, and the imbalance of the hemostasis system has been shown. Patients with DM are characterized by diffuse and multivessel coronary artery lesions, and initial diabetic cardiomyopathy contributes to the development of severe forms of chronic heart failure (CHF) in patients with MI [4].

There is ample evidence in the literature to support that DM or hyperglycemia on admission in patients with MI are independent predictors of poor patient prognosis. It was found that both newly diagnosed and

pre-MI DM is an independent predictor of death and adverse cardiovascular events within a year after the index event [6].

The issue of MI and DM comorbidity is being actively studied in a cohort of patients older than working age. In the conditions of modern clinical medicine, there is a clear trend towards "rejuvenation" of DM: about 50% of all DM patients in the world are aged 40–59 years [4]. It is known that DM and metabolic syndrome are more common in women who have had myocardial infarction at a young age than in men [3]. It is not difficult to assume that an unfavorable combination of MI and DM at a young age may also have other features, a comprehensive study of which is of particular relevance.

**Conclusions:** The high prevalence of acute forms of coronary artery disease and the resulting mortality among the able-bodied population of the Russian Federation creates the prerequisites for a comprehensive study of the problem and the determination of priority areas for providing medical care to the population. A detailed study of risk factors, clinical features and the course of MI, and, finally, comorbidity in men and women of working age will not only determine the optimal tactics for managing patients of this age groups, but will also improve the effectiveness of primary and secondary prevention programs.

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