Journal of Advanced Zoology

ISSN: 0253-7214

*Volume **44** Issue **S-2 Year 2023** Page **4516:4521***

FEATURES OF COMORBIDITY OF ANEMIA AND CORONARY HEART DISEASE (LITERARY REVIEW)

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Article History

Received: 12 July 2023
Revised: 10 September 2023
Accepted:12 November 2023

ANNOTATION. The article discusses the problem of comorbidity of anemia and cardiovascular diseases (CVD). Anemia significantly increases the risk of developing and progressing CVD. A number of studies have found that, regardless of the presence or absence of anemia, iron deficiency leads to the development of cardiovascular complications, decreased quality of life and increased mortality in patients with CVD. The article also discusses the etiology and pathogenesis of the development of anemia, the mechanisms of the adverse effect of this condition on the quality of life, functional status and prognosis of life of patients.

KEYWORDS: anemia, cardiovascular disease, comorbidity, heart failure, decompensation, hematocrit.

Comorbidity is one of the most significant clinical problems in the practice of doctors of all specialties, since it requires interdisciplinary training and orientation from the supervising physician in the diagnosis and management of patients with combined pathology. There is no single approach to understanding the essence of comorbidity and its definition. Some authors understand by comorbidity the combination in a patient of two or more diseases that are pathogenetically related to each other. According to others, comorbidity is a clinical situation characterized

by the presence of two or more diseases in a patient, different in etiology, pathogenesis, and treatment approaches.

Anemia is one of the comorbidities in cardiac patients and poses a number of additional problems for the doctor when managing patients with cardiovascular diseases. The solution to these problems comes down mainly to the timely detection of anemia, determination of the pathogenetic variant and the cause of its development, assessment of the "clinical contribution" of anemia during the course of the disease, and the prescription of adequate methods for correcting anemia, taking into account the specific clinical situation.

Cardiovascular disease is the leading cause of death worldwide. Many patients with cardiovascular disease suffer from anemia as a result of acute or chronic complications.

The purpose of this study is to study and analyze scientific publications devoted to the prevalence of anemia among patients with CVD, diagnostic problems, features of the clinical course and etiopathogenetic treatment. 22 sources published in 2010-2022 were analyzed. Of these, 4 are the work of national scientists, 16 are research works of foreign scientists. Sources used are PabMed, E-library and Elsevier. Anemic syndrome is a common occurrence among coronary patients. [4]. The significant importance of anemia as a risk factor for poor prognosis in various forms of coronary heart disease (CHD), in particular in acute coronary syndrome and heart failure, has been established [4, 6].

Anemia of varying severity is a frequent accompaniment of chronic heart failure (CHF) [4, 8]. The frequency of this combination ranges from 10 to 79%, depending on the age and gender of patients, the severity of clinical manifestations, and the criteria for diagnosing anemia [4].

In acute myocardial infarction, anemia is combined with [3] an increased risk of developing post-infarction angina, recurrence of myocardial infarction, unfavorable course of cardiogenic shock and the development of more severe manifestations of heart failure after myocardial infarction [3]. In addition, anemic syndrome is considered one of the extracardiac mechanisms contributing to the manifestation of coronary heart disease, and therefore it is considered advisable to take this factor into account when classifying unstable angina [5].

Anemia is not uncommon in the daily practice of a doctor and occupies a leading place in the list of 38 most common diseases. Anemia, with increasing age of patients, is often present as a background condition in which the course of the underlying disease (CHD) becomes extremely severe. In general, the problem of anemia in CVD is not a new problem, but 15 - 20 years ago its study was of an academic nature (dis).

It should be noted that anemia in inpatients with coronary artery disease is not recognized as a problem in any national guidelines. Data on the causes of the development of anemic syndrome in coronary patients are scarce and contradictory. Potential causes of the development of anemic syndrome against the background of coronary artery disease, including diseases of the gastrointestinal tract, but they have not been sufficiently studied in this context.

A decrease in a patient's hemoglobin level potentially worsens the prognosis for almost any cardiovascular disease. Correction of anemia with erythropoiesis stimulants (erythropoietin, intravenous iron supplements) can be a very useful additional treatment for patients with heart failure refractory to standard therapy. Oral iron supplementation is ineffective in treating anemia. Recent studies conducted by European scientists have shown the positive effect of treatment with erythropoietin in combination with intravenous iron administration on the course of CHF [5, 12].

A number of studies have established that in patients with coronary heart disease (CHD), there is a connection between the level of hemoglobin (Hb), other erythron levels, on the one hand, and the course of the disease, its prognosis, and mortality, on the other. A relationship between anemia and frequency of hospitalizations for cardiovascular pathology [1, 2]. Patients with multivessel coronary artery disease had the lowest levels of Hb, hematocrit (Ht) and erythrocytes, average Hb concentration in erythrocytes, serum iron (Fe), transferrin and total iron-binding capacity of serum [3, 4].

The latest recommendations of the European and American Heart Association suggest mandatory determination of hemoglobin levels in all patients with stable angina and consider anemia as a factor provoking coronary insufficiency [8, 9].

In acute coronary syndrome, the presence of anemia can quadruple the likelihood of death in patients and is considered an independent predictor of the risk of adverse clinical outcomes [1,4]. Even chest pain syndrome in women, when combined with anemia, turns out to have a more unfavorable prognosis and the risk of death increases by two times [13].

And in the latest recommendations for the diagnosis and treatment of patients with CHF, experts from these associations note that anemia not only increases the symptoms of CHF, worsens the quality of life of patients, reduces exercise tolerance, can cause the development of acute decompensation of CHF and an increase in the frequency of hospitalizations, but is also an independent negative predictor of prognosis [4,5, 10].

The risk of death in CHF in patients with anemia is twice as high as without it, even when taking into account additional variables (renal dysfunction, severity of CHF, and others) [8]. Already latent iron deficiency can have a negative impact on

the prognosis of CHF [9], which makes it advisable to determine its markers in all patients with CHF.

Anemia in people with cardiovascular disease may have the same etiological factors as in the general population. An additional role in the development of anemia in cardiovascular pathology may be played by the older age of patients, which is itself associated with a lower hemoglobin value, the increasing incidence of chronic kidney disease, and the high prevalence of diabetes mellitus. It is assumed that a number of factors are important in the development of anemia in pathology of the cardiovascular system, such as a chronic inflammatory process (increased synthesis of proinflammatory cytokines - tumor necrosis factor alpha, interleukin-6), ischemic depression of bone marrow hematopoiesis, decreased synthesis of endogenous erythropoietin due to renal dysfunction.

The relevance of the issue of early diagnosis of anemia in patients with cardiovascular pathology is determined by the fact that its late detection leads to a delay or absence of the necessary intervention in relation to a potentially correctable condition. A significant proportion of patients with cardiovascular pathology have latent iron deficiency, or iron deficiency anemia (IDA) or a combination of these conditions with other types of anemia.

Long-term anemia may be accompanied by enlargement of the left chambers of the heart [5, 6]. On the part of the cardiovascular system, compensatory responses develop such as tachycardia, increased cardiac output, dilation of blood vessels, which as a result can increase tissue perfusion, but at the same time there is also a threat of the development of oxidative stress [6].

Thus, the presence of anemia in people with cardiovascular pathology poses a serious problem both from the point of view of deciphering the pathogenetic connection with the underlying disease and in the management of this category of patients. Regardless of whether anemia is a true comorbidity or turns out to be pathogenetically associated with cardiac pathology, in each specific situation timely diagnosis of anemia, verification of the pathogenetic variant and the reasons for its development, and adequate correction with the help of antianemic, mainly iron-containing, drugs are necessary.

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