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Title: **CLINICAL, LABORATORY AND FUNCTIONAL SIGNIFICANCE OF ANEMIA CORRECTION IN PATIENTS WITH CHRONIC HEART FAILURE.**

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## CLINICAL, LABORATORY AND FUNCTIONAL SIGNIFICANCE OF ANEMIA CORRECTION IN PATIENTS WITH CHRONIC HEART FAILURE.

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**Abstract.** Heart failure is a condition in which the heart as a pump is unable to supply the body's organs and tissues with enough minerals. In medicine, chronic heart failure is one of the most serious diseases of the cardiovascular system, affecting the elderly and the able-bodied, leading to early disability, which in turn indicates the social significance of the problem in our country.

**Keywords.** Anemia, chronic heart failure, iron, ritropoetin, vitamins.

**Introduction.** Anemia is one of the factors leading to the prognosis of the disease in the cardiovascular system. Anemia can occur for a variety of reasons (disorders of erythropoiesis, vitamin B12 deficiency, folic acid, iron, etc.), and can manifest as an independent disease associated with the syndrome associated with the underlying disease. In both cases, anemia can be seen as a joint disease that worsens the life prognosis, and can be seen as a bad object in heart failure.

According to the WHO definition, anemia is a decrease in hemoglobin (Hb) levels to <13 g / L in men and <12 g / L in women.

The onset and development of anemia in patients with chronic heart failure are well studied. The main mechanisms of its development are due to chronic blood loss, erythropoietin-dependent processes, hemodilution, malabsorption and cardiorenal syndrome with drug effects.

Anemia in elderly patients with chronic heart failure develops in the following cases: diabetes mellitus, chronic renal failure, high blood pressure, chronic

heart failure (IBC), low exercise, high doses of diuretics, as well as high levels of neurotransmitters, inflammatory cytokines

and C-reactive protein may be [Opasich C, Cazzola M, Scelsi L, De Feo S, NC E, Lagioia R, Febo O, Ferrari R, Fucili A, Moratti R, Tramarin R. 2018].

Despite the high prognostic value of anemia in terms of short-term and long-term prognosis, its correction does not lead to prolongation of life. Currently, iron and erythropoietins are recommended for all patients with anemia and chronic heart failure due to improved quality of life, exercise endurance, and structural and functional parameters of the heart.

As for anemia in acute coronary syndrome and acute heart failure, its presence increases mortality and severity of heart failure symptoms. There is no prospective research in this area. Data on acute coronary syndrome and anemia in acute heart failure are being recorded and research on these nosologies is ongoing.

The prevalence of anemia does not depend on left ventricular function

parameters [Oswald G 2015], there is a weak inverse relationship between Hb and left ventricular emptying fraction rate [3], moreover, not with an increase in Hb levels, but with a decrease in left ventricular emptying fraction values [1]. In left ventricular dysfunction with anemia, the level of the sodium uredic peptide marker increases.

In a number of studies, the relative risk of death was increased by 20–50% with anemia. Similar symptoms were detected with impaired left ventricular function. An increase in mortality was observed both with first-onset anemia and with a gradual decrease in Hb levels [5].

Thus, there is no definitive definitive answer to the question of whether anemia, which may affect the prognosis of patients with heart failure, is the cause or indicates an adverse clinical outcome. In this regard, the problem of anemia in acute coronary syndrome with acute heart failure remains relevant and requires further study.

The median decrease in the estimated glomerular filtration rate in patients with myocardial infarction is accompanied by a 3-fold increase in mortality in patients [2] and when there is a terminal phase of decreased renal function, the risk of death increases 15-fold [3]. In large studies that excluded patients with creatinine levels above 2.5 mg / dL, decreased renal function, increased mortality, and increased risk of cardiovascular events were associated with these processes [4]. The relationship between cardiovascular disease and renal dysfunction is reflected in the concepts of cardiorenal syndrome (CRS), cardiorenal persistence, cardiorenal relationship.

Cardiorenal syndrome is a pathological process that develops in the heart or kidneys, in which acute or chronic dysfunction of one organ leads to acute or chronic failure of another. The modern classification of cardiorenal syndrome, which includes 5 subtypes, reflects the pathophysiology, timing, and nature of heart and kidney disease. In the first type of cardiorenal syndrome, sudden heart failure (e.g., with cardiogenic shock or decompensated heart failure) leads to acute kidney damage. In the second type of cardiorenal syndrome, chronic heart disease (e.g., with chronic heart failure) contributes to the development of chronic kidney disease. Type 3 cardiorenal syndrome is characterized by the development of acute renal dysfunction (acute renal ischemia or glomerulonephritis), which leads to acute heart pathology (heart failure, arrhythmia, ischemia). In type 4 cardiorenal syndrome, chronic kidney disease (e.g., chronic glomerulopathies) leads to decreased cardiac activity, the appearance of chamber hypertrophy, and increases the risk of adverse events in the cardiovascular system. In type 5 cardiorenal syndrome, any systemic disease (e.g., sepsis) leads to both heart and kidney dysfunction.

The incidence of chronic heart failure has been steadily rising in recent years. There are 7 million people over the age of 45 in the United States. It is more common in men than in women, and the number of patients is increasing by 400,000 each year.

In the diagnosis of chronic heart failure with anemia, it is important to determine not only the presence of the disease, but also the factors that lead to its occurrence. For this purpose, in the

diagnosis of this disease, along with general blood, biochemical analysis, ECG and ExoKG methods are widely used. (2)

**Conclusion.** In our study, echocardiography using the method of examination: the volume of the heart chambers, left ventricular hypertrophy, diastolic function, left ventricular and right ventricular pressure, allows to study.

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