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SOME ASPECTS OF THE LATENT IRON DEFICIENCY DIAGNOSIS IN THE PATIENTS WITH CARDIAC PATHOLOGY

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Currently, anemia (AN) is a common chronic disease. According to WHO (2008) 24.8% of the world population is at risk of developing anemia. One of the most important causes of anemia is iron deficiency [5]. Anemia is an independent

risk factor for adverse cardiovascular disease (CVD) outcomes [6]. It's shown that anemia contributes to the manifestation of coronary heart disease (CHD) [3], worsens the prognosis and development of complications in acute myocardial infarction [4], and increases the risk of heart failure progression [2]. In cardiac patients, the leading factors of anemia etiology and pathogenesis are associated chronic diseases (infections, chronic inflammatory diseases, neoplasm, chronic renal failure) (about 58%) and iron deficiency (about 21%) [1]. In the both cases, the diagnosis and correction of iron deficiency are the main factors to combat this disease.

The purpose of the study: to analyze the prevalence of indirect signs of latent iron deficiency in patients with CVD.

Materials and methods: 100 patients with the most common cardiovascular diseases (stable forms of CHD and Hypertension (AH)) were examined during the planned treatment in the cardiology department of DCCH # 9.

The following general blood test indicators were used to analyze the latent iron deficiency markers: hemoglobin level (Hb) (norm for women (W) – 120-150 g / l, for men (M) – 130-160 g / l), the number of red blood cells (RBC) (norm for W is 3.8-5.2 x 10^{12} cells / l (cl / l), and for M – 4.3-5.8 x 10^{12} cl / l), hematocrit level (Hct) (the norm for W is more than 35%, and for M is more than 39%)**,** the average Hb content in erythrocyte (MCV) (norm is 80-95 femtolitre (fl)). The study was carried out using the automatic hematological analyzer Micros 60, HORIBA (France) with further statistical processing of data. The patients' average age was 58.05 ± 12.2 (26; 80) years. 62 % of Men, 38% of Women.

Results. Most of patients had a combination of CHD and AH – 74% (44 M, 30 W), only 14% (10 M, 4 W) had been diagnosed of CHD, and 12% only had AH (8 M, 4 W). The study did not include patients with gastroduodenal pathology, severe heart failure, renal failure, and with previously diagnosed anemia. All women were menopause.

The levels of the examined hematological indicators in the whole group are presented in Table 1.

Table 1

All pts, n	RBC, 10^{12} cell / l	Hb, g / l	Hct, %	MCV, fl
100	4,99±0,7	147,3±17,0	44,5±5,9	90,3±9,7

Nobody had obvious clinical signs of AN.

However, in spite of the absence of clinical signs of AN, some patients showed a deviation of the red blood values: 10 patients (8M, 2W) had a lower Hct level, and 14 patients (10M, 2W) had a lower serum MCV levels. The changes of Hct and MCV parameters are presented in **Table. 2**. The iron, transferrin and serum ferritin levels were not studied in these patients during the routine hospitalization.

Patients, n	Hct level		MCV level	
	n (%)	Hct, %	n (%)	MCV, %
All pts: 100	10 (10%)	34,1±2,6	14 (14%)	69,0±4,7
Of them: W 38	2 (5,3%)	32,0±1,4	4(10,5%)	70,0±8,4
M 62	8 (12,9%)	34,6±2,6	10 (16,1%)	68,6±2,9

The revealed differences in the levels of the studied indicators were statistically insignificant.

Conclusions. In the examined patients with AH and stable forms of CHD without concomitant pathology, no clinically expressed forms of anemia have been revealed. The number of patients with latent iron deficiency was small (men are more likely than women). The presence of signs of latent iron deficiency in patients with most common cardiovascular diseases requires more attention and further research study, taking into account the age, sex, duration and features of the course of cardiovascular disease, as well as the duration of menopause and, may be, the presence of the most common endocrine pathology (diabetes mellitus, hypothyroidism), etc.

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