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STRUCTURAL AND FUNCTIONAL CHANGES IN LEUKOGRAM OF PATIENTS WITH HEART FAILURE

Tashchuk Viktor

Doctor of Med.Sci., Professor, Head of the Department of Internal Medicine,
Physical Rehabilitation and Sports Medicine
Bukovinian State Medical University

Nesterovska Romana

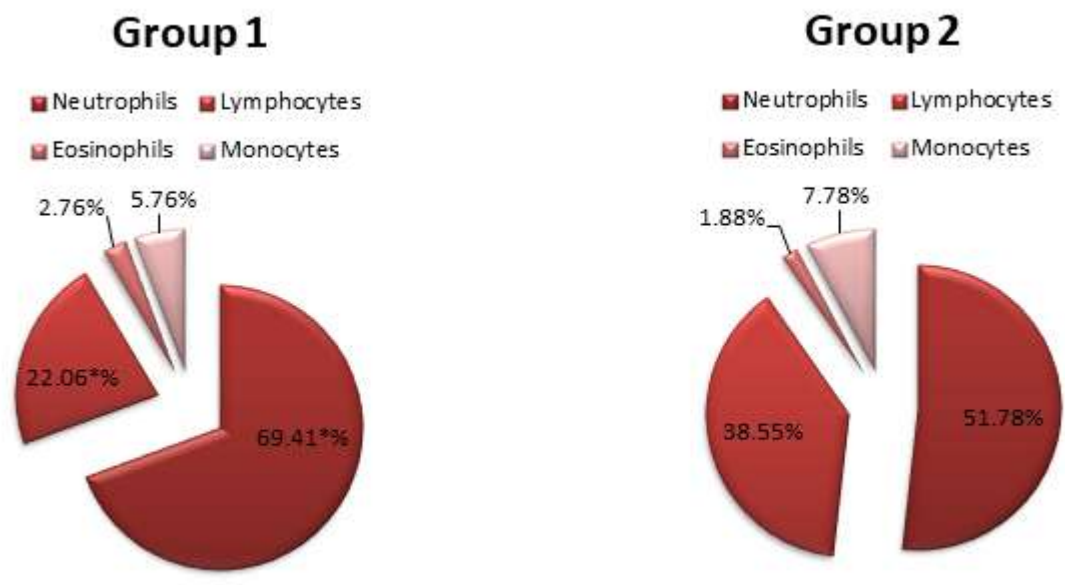
Physician, senior laboratory assistant of the Department of Internal Medicine,
Physical Rehabilitation and Sports Medicine
Bukovinian State Medical University

Heart failure (HF) is a common syndrome in both women and men with high associated healthcare costs [1]. Coronary heart disease is recognized as the primary risk factor for heart failure development, being the main etiological factor in more than 50% of heart failure patients in North America and Europe. Regardless of overt coronary artery disease, myocardial ischemia is a common finding in failing hearts, likely due to structural or functional coronary circulation alterations [2]. The application of a simple blood test to predict prognosis in HF patients is not well established [3].

The purpose of the study. To study the features of the leukogram in patients with HF.

Materials and methods of research. To achieve this goal, the data of 26 case histories diagnosed with CHD were analyzed with diagnosis Stable angina pectoris functional class (FC) II-III, Cardiosclerosis; in 17 patients complicated by syndromic manifestations of HF II-III FC according to the New York Heart Association (NYHA), which formed (group 1), and 9 patients without signs of HF – (group 2). Among the subjects of group 1 was: 8 men and 9 women. The age of patients ranged from 53 to 73 years for men, and for women was 54-71 years. Blood sampling was performed upon admission to the medical institution. The total number of blood leukocytes and leukocyte formula were determined.

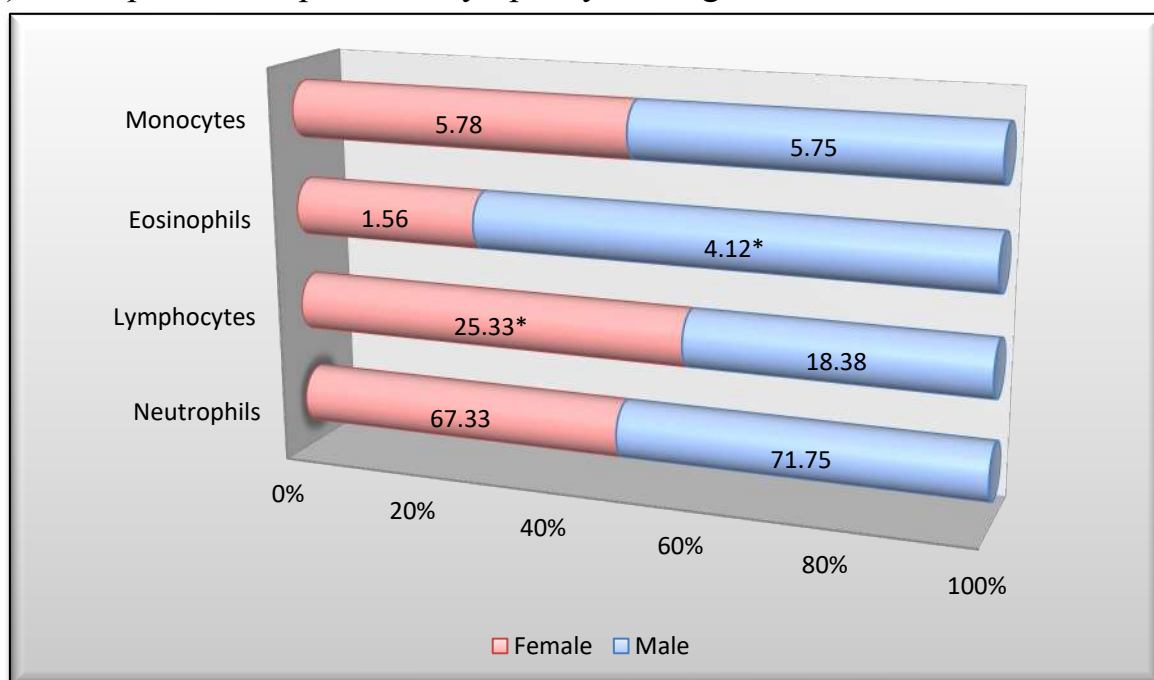
Results and their discussion. The mean age of all patients in our study was 60.2 ± 7.1 (M \pm m) years. Analyzing the leukogram data, it was found that patients in group 1 in contrast to patients in group 2 had a significantly higher total level of leukocytes $(7.96 \pm 1.73) \times 10^9$ compared $(4.22 \pm 0.24) \times 10^9$, $p < 0.05$, level neutrophils $(69.41 \pm 6.21) \%$ vs. $(51.78 \pm 1.79) \%$, $p < 0.05$, and lower lymphocytes levels in group 1 $(22.06 \pm 4.07) \%$ than in group 2 $(38.55 \pm 1.01) \%$, $p < 0.05$. Changes indicate a more severe course of the disease in patients with complicated by syndromic manifestations of HF. There were no differences between eosinophils and monocytes in the study groups - Figure 1.



Notes: the significance of the difference between the indicators: * p<0.05

Figure 1 - Leukogram parameters in the studied patients

The analysis of indicators of the leukogram depending on article showed that at sick men increase in number of eosinophils was noted (4.12 ± 0.83)% in contrast to women (1.56 ± 0.73) is noted; $p < 0.05$, and a lower level of lymphocytes (18.38 ± 1.69) % vs. (25.33 ± 2.24)%; $p < 0.05$ - Figure 2, which reflects systemic inflammation. Women had a higher level of total leukocytes (9.36 ± 0.66) $\times 10^9$ than men (6.36 ± 0.99) $\times 10^9$; $p < 0.05$, in particular lymphocytes - Figure 2.



Notes: the significance of the difference between the indicators: * $p < 0.05$

Figure 2- Gender differences in the leukogram in patients with heart failure

Conclusions. Heart failure is characterized by significantly higher total levels of leukocytes in the peripheral blood due to the number of neutrophils which are a predictor of cardiovascular risk and low levels of lymphocytes which is a predictor of mortality in patients with HF of ischemic genesis.

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