Chronic heart failure (CHF) is a disease that negatively affects the prognosis of patients. The presence of aggravating (comorbid) conditions, in particular connective tissue disorders, can aggravate the course of heart failure (HF).

Modern immunologic markers can be used for additional assessment of the severity of the CHF course.

The aim of the study was to investigate possible associations of galectin-3 with laboratory and instrumental parameters in patients with CHF and osteoarthritis (OA).

Methods. A one-stage cross-sectional study was performed in 115 patients with CHF who were undergoing outpatient follow-up: 65 patients — the study group with CHF and knee OA and 50 patients — the group with CHF without OA. A comparative analysis of laboratory and instrumental parameters reflecting the severity of OA progression and galectin-3 in both groups was performed, as well as the search for possible associations of galectin-3 with parameters reflecting the severity of CHF. The results of the comparative analysis are presented as median (Me) with first (Q1) and third (Q3) quartiles based on the Mann-Whitney test. The method of linear regression analysis was used to analyze the characteristics of the analyzed associations between several parameters. The critical level of significance of the statistical hypotheses evaluated was $p<0.05$. Comparison of frequency differences in the analyzed groups was performed using the $\chi2$-Pearson test.

Results. Significant differences in creatinine levels, glomerular filtration rate (GFR), changes in lipidogram parameters were found between the studied groups. Higher rate of left ventricular hypertrophy (LVH), higher values of left ventricular myocardial mass index and ratio of transmitral flow parameters were found in the studied group (CHF and OA) compared to patients with CHF without OA. A statistically significant increased level of galectin-3 was found in the group of patients with CHF and OA compared to patients without OA: 39.4 (30.3 — 68.2) and 19.1 (15.5 — 8.4) ng/mL, respectively. Also in the group of patients with CHF and OA, a logistic regression model was constructed with galectin-3 levels and parameters reflecting the severity of the CHF course.

Conclusion. Chronic low-intensity inflammatory process, as exemplified by OA, may significantly worsen the course of CHF. The increased level of galectin-3 and its association with parameters reflecting the severity of the HF course in the group of patients with CHF and OA may indicate more pronounced myocardial fibrosis and a higher risk of adverse outcomes compared to patients without OA.