

STRESZCZENIE W JĘZYKU ANGIELSKIM

INTRODUCTION

Heart failure (HF) is one of the most serious and prevalent cardiovascular diseases worldwide. According to epidemiological data, the number of patients with HF continues to increase, and the disease remains one of the leading causes of hospitalization and mortality in developed countries. Among the most commonly assessed biomarkers in HF is N-terminal pro-B-type natriuretic peptide (NT-proBNP), which plays a key role in the diagnosis and assessment of heart failure severity. Increasing attention is also being paid to other biochemical parameters, such as serum iron and copper concentrations, which are involved in numerous metabolic processes and are essential for proper cardiovascular function. In addition, cancer antigen 125 (CA-125), traditionally associated with oncological diagnostics, has been shown to be useful in the evaluation of patients with heart failure, particularly in the context of fluid overload and inflammatory processes. Simultaneous assessment of these biomarkers may provide valuable information regarding the pathophysiology and progression of heart failure.

AIM

The aim of this study was to evaluate serum copper, iron, CA-125, and NT-proBNP concentrations in patients with chronic heart failure and compare them with those observed in a healthy control group.

MATERIAL AND METHODS

The study was conducted between November 15, 2023, and November 15, 2025, at the Provincial Integrated Hospital in Kielce, Poland. The study group consisted of patients diagnosed with chronic heart failure who met the inclusion and exclusion criteria. The control group comprised healthy individuals. Anthropometric measurements were performed in all participants using certified equipment. Following the measurements, participants were referred to the "DILAB" Diagnostic Laboratory for blood biochemical testing. Serum concentrations of copper, iron, CA-125, and NT-proBNP were determined. The collected data were subsequently subjected to statistical analysis.