The aim of the study was to investigate the main parameters of high-resolution electrocardiography (HRECG) in elderly patients suffering from chronic heart failure (CHF).
Methods. The study included 120 patients (87 women (72.5 %) and 33 men (27.5 %)) of elderly age (mean age 81.32±4.2 years) with CHF. Patients with postinfarction cardiosclerosis (PICS) were divided into groups: 38 patients with CHF IIA and CHF IIB stages; 50 patients with complete bundle branch block (CBBB) with CHF IIA and CHF IIB stages; 32 patients with atrial fibrillation (AF) with CHF I and CHF IIA stages. Patients underwent ECG, Holter monitoring, HRECG. Statistical processing of the study results was performed using the Stat Soft 13.0 software package.
Results. The highest values in the group of patients with CHF + PICS were recorded for QTc (452.52±3.55 ms), QTp (87.83±1.21 ms) and TotQRSF (103.25Ґ}2.97 ms). The highest values in the group of patients with AF were recorded for QTc, TotQRSF and LAS40 (452.65±2.69 ms; 100.04±2.36 ms and 51.64±2.85 μV, respectively). In patients with complete bundle branch block (CBBB), the highest values were recorded for QTc, TotQRSF, LAS40 and PTotal (463.25Ґ}3.98 ms; 115.44±3.45 ms; 67.44±4.63 μV and 128.83±8.65 ms, respectively). The highest QTc and TotQRSF values were observed in patients with CHF IIB stage + PICS and CHF IIB stage + CBBB. Linear regression analysis revealed a correlation between ventricular late potential indices (TotQRSF, RMS40, LAS40) and cardiac ECHO parameters such as end diastolic diameter (EDD), end systolic diameter (ESD), interventricular septal thickness (IVST), left ventricle posterior wall thickness (LVPWT).
Conclusion. HRECG analysis can assess myocardial electrical instability and remodeling in CHF. In our study, HRECG indices such as TotQRSF, RMS40, and LAS40, which reflect myocardial electrical heterogeneity, were impaired in elderly patients with severe CHF. This suggests the presence of fragmented electrical activity, which may be associated with structural and functional myocardial changes. HRECG analysis can be used for a comprehensive assessment of the cardiovascular system in this group of patients.