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Functional class of chronic heart failure and hemodynamic changes in acute postoperative period after implantation of pacemakers

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Objective. To evaluate the hemodynamic parameters depending on the functional class (FC) of chronic heart failure (CHF) before and in the early period after implantation of pacemaker with the modes of stimulation DDD/DDDR and VVI/VIIR.

Materials and methods. The study involved 143 patients (77 men and 66 women) before and immediately after pacemaker implantation for the atrioventricular (AV) block, permanent bradyarrhythmic atrial fibrillation (AF) and sick sinus node syndrome (SSNS) with the modes of stimulation DDD/DDDR and VVI/VVIR. Hemodynamic parameters were evaluated in the early postoperative period (3—5 days) depending on the functional class of chronic heart failure (CHF FC).

Results and discussion. Implantation of pacemaker in the early postoperative period resulted in the stabilization of the systolic blood pressure (SBP), in some decrease in end-diastolic and systolic volumes of the left ventricle (LV EDV and ESV) and an increase in left ventricular ejection fraction (LVEF), correlated with CHF FC, more pronounced in high FC CHF. More time period of effective drug support is required to achieve the significant effects of reverse remodeling of the heart in the form of reduced hypertrophy of posterior wall thickness and interventricular septum of the left ventricle (LV PW and IVS), the left (LA) and right atrium (PP), right ventricular (RV).

Conclusions. Patients with pacemaker require comprehensive drug support, which should be performed depending on the severity of CHF FC. Moreover, further analysis of acute and especially long-term results pacemaker implantation, depending on the region of the endocardial electrodes, programming pacemaker, percent stimulation of the heart chambers, as well as the presence of significant comorbidities.

Key words: permanent pacing, chronic heart failure, functional class of chronic heart failure, acute postoperative period.