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Class of QTc interval duration and functional parameters of blood circulation in acute postoperative period of patients in different modes of cardiac pacing

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Objective. To evaluate the functional performance of circulation in acute postoperative period in patients after pacemaker implantation in various modes of permanent pacing in the QTc interval duration classes of stimulated complexes.

Materials and methods. Functional parameters of blood circulation were investigated in 124 patients (63 men and 61 women) in the acute postoperative period after pacemaker (PM) implantation in modes DDD/DDDR, VVI/VVIR, CRT in classes of QTc interval duration. The assessment of blood pressure (BP), electrocardiography parameters (ECG), echocardiography parameters (EchoCG) was performed before and after pacemaker implantation (3–5 days after surgery). The patients with pacemakers were divided into classes based on the QTc duration: the I group included 27 (22 %) patients with normal duration (320–440 ms), and II involved 97 (78 %) patients with long QTc (> 440 ms).

Results and discussion. Pacemaker implantation resulted in the shortening (16 % of patients) or leaving QTc interval duration unchanged in stimulation modes DDD/DDDR and lengthening (70 % of patients) or leaving unchanged in the modes AP, VVI/VVIR, CRT. Elongation was associated with increasing of the QRS complex duration in all modes of stimulation, no changes in all the studied parameters, except for reducing the end-systolic volume and end-diastolic volume in CRT mode.

Conclusions. Patients group with shortening and lengthening of the QTc interval in the acute postoperative period after pacemaker implantation requires more careful control of the parameters of stimulation and drug therapy.

Key words: pacemaker, right ventricular pacing, biventricular pacing, electrocardiography, QTc interval duration, echocardiography.