THE PROGNOSIS FOR PATIENTS WITH ISCHEMIC HEART DISEASE AND CONCOMITANT ATRIAL FIBRILLATION AFTER AN OPERATION OF RADIOFREQUENCY ABLATION

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INTRODUCTION

The most perspective method of treatment and preventive measures for cardiovascular complications with patients with atrial fibrillation is radiofrequency ablation of hyper-automatic focuses [5, 8]. At this, the combination of treatment strategies of general cardiovascular pathology and arrhythmia syndrome cause the disappearance of arrhythmia attacks, reduction of congestive heart failure class and improving of patients' states [7]. Finally, the authors connect the increase of patients' life quality after the interference with reverse structural and geometric remodeling, decrease of dependence on arrhythmia and constant administration of anti-arrhythmic drugs [9]. Alongside with that, in most publications it is pointed out at the necessity of additional discussion of clinical and functional characteristics and prognosis for patients with atrial fibrillation who had radiofrequency ablation of hyper-automatic focuses [1, 8].

OBJECTIVE

Study the indices of prognosis for patients with ischemic heart disease and concomitant atrial fibrillation after an operation of radiofrequency ablation.

MATERIAL AND METHODS

We included 64 patients (average age 52,7±3,9) with ischemic heart disease that shows as strokes of stable angina of I–II functional class into our research "occurrence–control". All the patients had a paroxysmal form of atrial fibrillation confirmed earlier. They underwent radiofrequency ablation of hyper-automatic focuses. The patients follow-up after the operation was on the average 3,6±1,2 years. We considered as the combined end point of unfavourable prognosis: appearance of AF relapses after the operation and development of cardiovascular complications. Its beginning was registered with 22 patients (34,4%). They made the 1st group. 42 patients (65,6%) didn't have arrhythmia relapses after the operation. They were included into the 2nd group. The groups were matched according to sex, age and concomitant pathology. The checkup included: the analysis of complaints of chest pains, dyspnea, intermissions in heart function, appearance of weakness; history taking; physical examination; registration of standard electrocardiography (ECG); Holter monitoring of ECG; transthoracic echocardiography (EchoCG) and Doppler cardiography. We were doing the research in the setting of sinus rhythm at frequency of heart beats 60–70 per minute. On ECG we studied indices of atrial complex: P_{max} and P_{min} – maximum and minimum of P-wave length, P_{dis} – P-wave dispersion [9]. During EchoCG we estimated: A-P dimension, volume of a left atrium. Left ventricular diastolic function was studied by transmitral flow markers. The data analysis was performed with the help of the application program package "Statistica 6.1". The obtained numeric data were stated in SI-units. We were defining the indices: average minimum, maximum, error of arithmetical mean, rms deviation. Parametric (paired and unpaired Student's *t*-test for dependent and independent samples, Pearson's linear correlation coefficient) and nonparametric (Fisher's test, Mann-Whitney U-test, χ^2 with Yates adjustment) were applied. The analysis of discrete parameters frequency was accomplished with the appliance of contingency tables, Pearson's χ^2 test and McNemar's χ^2 test. For estimation of connection between variables we used Spearman rank correlation coefficient. To compare the indices in initial and prospective

researches we used Wilcoxon paired difference *t*-test. Studying of prognostic value of clinical laboratory data were done according to the indices: sensitivity (Se), specificity (Sp), positive predictive value (PPV), negative predictive value (NPV), odds ratio (OR). The level of statistical significance was taken as 0,05 [2].

RESULTS AND DISCUSSION

The patients in the 2nd group (compared with the 1st) showed decrease of P-wave dispersion, size and volume of the left atrial (all $p < 0,05$). One can expect that it indicates the efficiency of the operation and the development of processes of reverse myocardium remodeling without atrial fibrillation relapses [3, 6, 7, 9]. Besides, in the 2nd group we observed decrease of the level of left ventricular diastolic dysfunction [3]. This observation can indicate the good prognosis with such patients. However, literature data about predictive validity of the mentioned indices are not so identical. Despite the obtained results, one can expect that the question about atrial fibrillation predictors needs more detailed the trial [6]. The results of the analysis of prognosis indices of patients with ischemic heart disease and concomitant atrial fibrillation after an operation of radiofrequency ablation are shown in table 1.

Table 1. *Prognosis indices of patients with ischemic heart disease and paroxysmal atrial fibrillation and those who had radiofrequency ablation*

Indices	Se, (%)	Sp, (%)	PPV, (%)	NPV, (%)	OR, (c.u.)
Chest pains	75,0	85,7	75,0	14,2	2,6
Dyspnea	28,5	62,5	40,0	50,0	0,7
Intermissions in heart function	55,6	40,0	66,7	40,0	1,9
Weakness	44,4	60,0	55,6	45,4	1,2
P_{max}	50,0	50,0	55,5	55,5	1,0
P_{min}	37,5	60,0	60,0	62,5	0,9
P_{dis}	63,6	60,0	63,6	40,0	2,6
Left atrial	45,4	50,0	55,6	60,0	0,9
Left ventricular diastolic dysfunction	54,5	58,3	54,5	71,4	1,7

As it appears from the table data, maximum prognostic value was shown by: chest pain and intermissions in heart function, P-wave dispersion, left ventricular diastolic dysfunction; average – appearance of weakness and increase of maximum P-length; low – complaints of dyspnea and decrease of a left atrial size.

CONCLUSION

So, when determining the prognosis for patients with ischemic heart disease and concomitant atrial fibrillation who had a radiofrequency ablation, one should take into account A-P dimension time course and a left atrial size. The appearance of left ventricular diastolic dysfunction can indicate high probability of development of relapses of the mentioned arrhythmia after the operation. The indices of electric remodeling of atrial myocardium and anamnesis, such as P-wave dispersion combined with complaints of weakness, intermissions in heart function and chest pains have predictive validity of cardiovascular complications development.

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