

# ECHOCARDIOGRAPHIC PARAMETERS OF MYOCARDIAL REMODELING IN PATIENTS WITH ATRIAL FIBRILLATION IN COMBINATION WITH ARTERIAL HYPERTENSION

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## ABSTRACT

**Introduction:** Atrial fibrillation (AF) is the most common, sustained supraventricular arrhythmia. The prevalence of this heart rhythm disturbance is 1-2% in the general population. AF is combined with many cardiovascular diseases, but most often with arterial hypertension. As a result of the irregular contraction of certain muscle atrial fibers, the mechanical systole of the atria and the irregular contraction of the ventricular myocardium are lost, the process of changing the electrophysiological and structural properties starts, which leads to changes in the geometry of the heart and intracardiac hemodynamics, as a result of which myocardial remodeling, impaired systolic and diastolic function of the heart develops.

**Purpose of the research.** To study echocardiographic parameters of the structural and functional parameters of the myocardium in patients with atrial fibrillation in combination with arterial hypertension.

**Material and methods.** The study was conducted on the basis of JSC National Scientific Cardiac Surgery Center, Department of Interventional Arrhythmology. The data of 33 patients with a diagnosis of atrial fibrillation in combination with arterial hypertension were analyzed. The average age was  $61.15 \pm 6$  years. Of these, 60.6% are women ( $n = 20$ ) and 39.3% are men ( $n = 13$ ). A paroxysmal form of AF occurred in 63.63% of patients ( $n = 21$ ), a persistent form was observed in 36.36% of cases ( $n = 12$ ). Heart parameters were evaluated by echocardiography. Statistical processing of indicators was performed using Microsoft Excel 2018 and Statistica 8.0.

**Results.** According to the results of the study, it should be noted that dilation of both atria occurred in 36.3% of cases, and dilation of only the left atrium in 45.4%. The volume of the left atrium was  $77.4 \pm 27.09$  ml. 90.9% of patients ( $n = 30$ ) have increased indicators of the indexed volume of the left atrium ( $38.8 \pm 7.8$  ml / m<sup>2</sup>) and the area of the left atrium ( $23.3 \pm 7.8$  cm<sup>2</sup>). 15.15% of patients showed a decrease in systolic function of the left ventricle. There were also signs of left ventricular hypertrophy, the left ventricular myocardial mass index was  $114.96 \pm 6.65$  g / m<sup>2</sup>. Diastolic dysfunction of the left ventricle occurred in 48.4% of cases, of which type 1 was 36.3%, type 2 12.1%.

**Conclusions.** Evaluation of echocardiographic parameters showed that in patients with atrial fibrillation in combination with arterial hypertension, myocardial remodeling with a tendency to dilatation of the atria, the formation of left ventricular hypertrophy with impaired systolic and diastolic function are observed.

