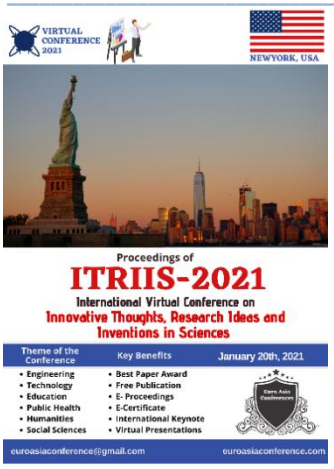

CLINICAL FEATURES OF IHD COURSE ON THE BACKGROUND OF ATRIAL FIBRILLATION

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Annotation.

The process of the formation of structural and functional disorders of the LV with a combination of atrial fibrillation (AF) and CHF in patients with coronary artery disease in combination with hypertension. With constant AF, the assessment of LV diastole by analyzing the spectrum of the transmitral diastolic flow is most often impossible. The combination of CHF with AF in patients with IHD in combination with hypertension necessitates the development of a special approach to the management of such patients. Over the past two decades, there has been an increase in the prevalence of chronic heart failure (CHF) and an increase in mortality of patients due to this pathology. This is due to the fact that the survival rate of patients with cardiovascular diseases increases, in particular those who have suffered acute coronary syndrome and, thus, are objectively predisposed to the development of CHF, as well as the fact that the proportion of the population of older age groups is steadily increasing in the population. CHF syndrome is the most common cause of hospitalization and cardiovascular mortality among people over 65.

Keywords:

Atrial fibrillation, chronic heart failure, echocardiographic parameters, arterial hypertension,ischemic heart disease,functional class, nonvalvular, cardiology, acute coronary syndrome, myocardial infarction

Introduction.

Chronic heart failure (CHF) and atrial fibrillation (AF) can rightfully be called epidemics of the 21st century among cardiovascular diseases [1, 7, 10]. Atrial fibrillation is the most common heart rhythm disorder among patients with CHF. The prevalence of AF among CHF patients increases in parallel with an increase in the functional class of CHF from 5% in asymptomatic patients to 50% or more in patients with FC IV according to NYHA [8, 12].

Main part.

The aim of this study was to study the clinical features of the course of ischemic heart disease in patients with hypertension associated with atrial fibrillation, who have risk factors for the development of chronic heart failure and cardiovascular complications.

We examined 78 patients with paroxysmal AF with nonvalvular etiology, hospitalized in the cardiac intensive care unit, emergency therapy of the Samarkand branch of the RSCEMC. When contacting the Center, patients underwent electrocardiographic studies, where rhythm disturbances in the form of AF paroxysm were recorded. In 41 (52.6%) patients, AF was detected for the first time, and in 37 (47, 4%) patients, AF was recurrent.

Results and discussions.

Physical examination revealed an outward displacement of the left border of cardiac dullness in 76% of patients with AF and in 64% of the control group. Weakening of the I tone was noted in 86% of patients with AF, and in patients of the control group, 35%, which is explained by the presence of paroxysm of AF in the main group. In 9% of patients with AF and in 30% of patients in the control group, an accent of the II tone over the aorta was observed. A diminishing systolic murmur above the apex was found in 20.4% of patients with AF and 15% of patients in the control group. AF patients had higher levels of prothrombin and sodium ($p < 0.05$), while glucose and creatinine levels were lower compared to controls ($p < 0.05$). Comparison of echocardiographic parameters of patients with coronary artery disease with paroxysmal AF with individuals in the control group revealed the following significant differences: LV CSR ($p < 0.05$), posterior wall thickness ($p < 0.001$), and interventricular septum ($p < 0.01$), and the relative thickness of the myocardium of the LVOTM ($p < 0.001$), the mass of the left ventricular myocardium ($p < 0.05$) and the mass index of the LV myocardium ($p < 0.01$) and the LA diameter ($p < 0.01$) were higher in patients with AF (Table 11). After a one-year follow-up, all AF patients were divided into 3 groups: group 1 - persons with no paroxysms or a single paroxysm during the year (low probability of recurrence of paroxysmal AF) - 34.7%; Group 2 - persons with persistent paroxysmal AF or transition to persistent AF in the presence of 2 or more paroxysms during the year (high probability of recurrence of AF paroxysm) - 44%; Group 3 - persons with a transition to a permanent form of AF - 21.3%. In patients of the 1st group and the 3rd group, the average duration and the number of paroxysms could not be estimated in dynamics. Whereas in group 2, after 12 months of observation, there was a significant decrease in the average duration of AF paroxysms ($p < 0.05$), as well as a significant decrease in the number of AF paroxysms after 12 months of observation compared to the initial data.

Compared to the control group, the functional class (FC) and the stage of CHF differed significantly only in patients of group 1: after 12 months, the FC of CHF in this group became significantly lower, which may indicate a lesser severity of heart failure in patients without AF paroxysms in during the year of observation. Initially, the functional class of CHF did not differ significantly in three groups of patients with AF and the control group, but it was higher in patients of group 3. Against the background of the treatment, patients of the 1st and 3rd groups showed a significant decrease in the FC of CHF after 12 months of observation, the most significant in patients with the transition to a permanent form (3rd group), ($p < 0.05$). These data indicate that in the case of transition of AF to a permanent form against the background of an adequate increase in heart rate (HR), the severity of CHF by the end of 1 year of follow-up is significantly reduced, but it remains more pronounced than with paroxysmal AF. The level of baseline heart rate in patients of group 3 was significantly higher than in patients in group 1 and did not differ significantly from patients in group 2. When compared with the control group, the heart rate in patients with AF in all studied groups was significantly higher due to the paroxysm of AF. In patients of the 1st and 2nd groups, after 12 months of follow-up, a significant decrease in heart rate compared to the baseline was revealed ($p < 0.001$). In patients of the 3rd group, after 12 months of observation, there was also a significant decrease in heart rate compared to the baseline ($p < 0.001$), but it remained higher than in individuals of the 1st and 2nd groups ($p < 0.001$). Thus, in patients

with AF transformation into a permanent form, even with therapy aimed at straightening the rhythm, the heart rate was higher than in patients with AF paroxysms. In patients of the 3rd group, the initial level of leukocytes in the blood plasma was significantly higher than in patients of the other two groups, however, after 12 months, no significant differences between the groups were detected. Significant dynamics of the level of leukocytes during the observation period was not observed in all groups. In general, the level of leukocytes in patients of all groups did not exceed the norm at any of the observation points. The level of stab leukocytes in patients of group 3 in comparative analysis repeated the patterns of changes in the total number of leukocytes, both at baseline and after 1 year of observation. The level of lymphocytes in patients of group 3 was significantly lower than in patients with rare paroxysms of AF; however, after 1 year, these differences were not detected. Other blood parameters in patients of all examined groups (the level of hemoglobin, erythrocytes, platelets, elements of the leukocyte formula) did not differ significantly and did not change throughout the observation period. As a result, after 1 year, no significant differences were found in this indicator between the study groups and the control. The potassium level in patients of the 1st group was significantly lower than in the control group. After 12 months, the serum potassium level in persons of group 1 remained lower than in controls and in patients with permanent AF (group 3), but did not go beyond the normal range ($p < 0.05$). The results of 24-hour ECG monitoring during the interictal period in patients with paroxysmal AF were characterized by significant variability. In the aspect of supraventricular arrhythmias, 2 types of Holter recordings can be distinguished: discrete type and continuous type of arrhythmic activity. In the first type, ectopic activity outside the AF attack was minimal or practically absent, in the second, a significant number of single, paired and group supraventricular extrasystoles, unstable paroxysms of supraventricular tachycardia or atrial fibrillation were observed, indicating a high arrhythmic readiness. The selected variants of ectopic activity outside the attack weakly correlated with the size of the atria or the frequency of persistent paroxysms. Thus, there were no significant differences in the indices of supraventricular ectopia and the number of ischemic episodes in the study groups in any of the comparison points. The likely reason is the significant variability in the data obtained. Compared with the control, patients of the 2nd and 3rd groups have an increased number of supraventricular single and paired extrasystoles, runs of supraventricular tachycardia ($p < 0.05$). In terms of ventricular ectopia, attention was drawn to a more significant number of single and paired extrasystoles, the number of pauses in patients of group 3 compared with other groups at the end of the observation.

EF in AF patients of all studied groups was significantly lower than in controls ($p < 0.01$ - 1st group, $p < 0.001$ - 2nd and 3rd groups). At the same time, in patients with different variants of the course of AF, the EF was approximately the same, both at the initial point and after 12 months of observation. Other echocardiographic parameters throughout the observation period did not change significantly and did not reveal significant differences when comparing patients of all groups with each other. Thus, in individuals with AF, transformed into a permanent form (group 3), LP, LPv, LVEDD were initially higher than in patients with paroxysmal arrhythmia (groups 1 and 2). These indicators may be promising in predicting the transition of paroxysmal AF to a permanent form. When carrying out a correlation analysis in patients of the study group, we obtained interrelationships of different severity between the studied parameters and the nature of the course of AF (considered as an increased risk of frequent relapses or transformation of AF into a permanent form). Of the main clinical characteristics, the indicator of the severity of CHF should be noted, which had a moderate correlation and statistically significant relationship with the course of AF. The majority of patients had moderate CHF (I and II FC), while patients with severe CHF (III FC) were mainly in the

3rd group of the study, and patients without CHF were distributed approximately equally between 1st and 2nd th groups. Among laboratory parameters, the level of potassium, the total number of leukocytes and the percentage of segmented leukocytes in the leukocyte formula had moderately pronounced positive correlations with respect to the final distribution of patients into groups ($p < 0.05$). The opposite pattern was typical for the content of lymphocytes in the blood ($p < 0.05$). The correlation between the clinical course of AF and the potassium level is inversely proportional. It is noteworthy that other laboratory blood parameters, including magnesium and IPT, did not have significant effects on the final distribution of patients into groups. There was a direct moderately pronounced correlation between the course of AF with pauses in the heart during the day, recorded during 24-hour ECG monitoring, in relation to the final distribution of patients into groups. So, in 70% of patients of the 3rd group, pauses in the work of the heart for more than 2 seconds were noted, and in patients of the 1st and 2nd groups, pauses were recorded only in 6.25% and 14.29% ($p < 0.001$). It is possible that the majority of patients with permanent AF transition have AV conduction abnormalities. The LA diameter was also increased in 100% of patients of the 3rd group, while in the patients of the 1st and 2nd groups, LA expansion was revealed only in 44.4% and 52.6%, respectively ($p < 0.05$) . The magnitude of the LA size was also increased in 100% of patients of the 3rd group, in turn, in patients of the 1st and 2nd groups, an increase in LA was found only in 44.4% and 52.6%, respectively ($p < 0.05$).

Conclusion.

Thus, such indicators of heart remodeling as an increase in LVEDD, an increase in left chambers, PA, as a result of the development of CHF, some clinical and laboratory data, namely the fact of relief with amiodarone, a variant of maintenance therapy, the level of potassium, leukocytes, lymphocytes, identified in patients with ischemic heart disease with paroxysmal atrial fibrillation with the help of dynamic observation, correlation analysis allow us to identify the most valuable criteria for predicting the course of arrhythmia in this contingent of patients in order to optimize their management strategy. The Framingham AF Study identified risk factors for AF over 20 years ago. It is more common in elderly patients, especially over 75 years of age, hypertension, congestive heart failure, MI, males [2, 4, 6]. Among the comorbid conditions in CHF, AF occupies one of the important places in a significant deterioration in the prognosis of patients [3, 5, 11]. The data obtained in our study by age and sex do not contradict the literature data. Paroxysmal AF eventually becomes permanent in 30% of cases. The presence of any form of AF, especially constant, contributes to the aggravation of the clinical picture of CHF, which often occurs with hypotension and severe tachycardia. The results of the study showed that during the period of one-year follow-up, AF became permanent in 21.3% of patients, which generally reflects the picture available in the literature. Conclusions. In nonvalvular paroxysmal AF, concentric remodeling and concentric LV hypertrophy are 2 times more common than in patients with systolic tachycardia without rhythm disturbances, which indicates the development of CHF signs. Taking into account the peculiarities of the clinical course of paroxysmal atrial fibrillation in patients with coronary artery disease, groups with a low recurrence rate of AF (34.7%), a high frequency of AF recurrence (44%), with transformation into a permanent nonvalvular form of AF during a year of follow-up should be distinguished (21.3 %).

The most informative criteria for the indicators of structural remodeling of the heart are measurements of the size of the left atrium, end-diastolic size of the left ventricle, and the diameter of the pulmonary artery. In patients with nonvalvular AF with hypertension and manifestations of CHF, regardless of the course of the disease, it is necessary to use β-blockers, especially in patients with coronary artery disease with transformation into a permanent

form of AF. In clinical, biochemical and instrumental studies of patients with coronary artery disease with paroxysmal AF, it is possible to predict with a high probability the further course of AF: with rare relapses, with frequent relapses, or the transition to a permanent form of AF.

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