

Cardiac arrhythmias in patients with rheumatoid arthritis

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Absrtact: 56 patients (82% of women) with an established reliable diagnosis of rheumatoid arthritis (RA) according to the criteria of the ARA were examined, the average age was 46.9 ± 1.2 years. Along with general clinical methods for all patients A 2DEhoCG study and daily monitoring of the Holter ECG (HM) were performed. 68.6% have a seropositive variant of RA. According to 2DECHOCG, pericardial damage was detected in 12.9%, endocardial damage of heart valves - in 32.8% of patients. After Holter monitoring, the presence of ventricular extrasystoles (VES) of high gradations was revealed in 65.7% of cases, among which paired VES occurred in 48.6%, episodes of unstable tachycardia - in 5.7% and early "R on T" - in 11.4% of patients. At the same time, there were no clinical signs of angina and/or episodes of pain-free myocardial ischemia. A clear trend has been demonstrated in the increase in the number of ventricular arrhythmias of high gradations in combination with damage to the endocardium of the heart valves and/or pericardium with an increase in RA activity, which illustrates the inflammatory nature of heart damage and reflects the subclinical course of rheumatoid carditis. The obtained results demonstrate polymorphism of clinical and instrumental signs of rheumatoid heart disease, which significantly complicates its timely diagnosis.

Keywords: rheumatoid arthritis, heart, arrhythmias, inflammation

INTRODUCTION

The prognosis and mortality rates in rheumatoid arthritis (RA) are comparable with those in lymphogranulomatosis, diabetes mellitus, severe forms of coronary heart disease. The defeat of the cardiovascular system is usually considered as an extra-articular manifestation of RA. Nevertheless, cardiac pathology in RA patients is often not diagnosed, receding into the background compared to the pronounced articular syndrome. However, according to recent studies, there has been a significant increase in total mortality and mortality from cardiovascular diseases in RA patients compared to the general population. Currently, much attention is paid in domestic and foreign literature to the accelerated progression of atherosclerosis in RA patients, which is associated with a chronic autoimmune process underlying the pathogenesis of both diseases and leading to endothelial dysfunction. In this regard, a number of

authors indicate that RA may be a risk factor for the premature development of such manifestations of atherosclerosis as coronary heart disease, as evidenced by It serves to increase mortality rates from acute myocardial infarction in groups of RA patients in comparison with the general population. Often, clinical manifestations of heart damage are masked by a bright articular pain syndrome and restriction of motor activity of patients, and therefore their identification is required. The greatest difficulties in the clinical interpretation of the nature of the pathological process arise in relation to RA patients with clinical signs of myocardial damage, which in 50-67% of patients is regarded by clinicians as myocardiodystrophy and much less often - (in 3.6-9.4%) as rheumatoid myocarditis, amyloidosis or coronariitis.

It is believed that any clinical and electrocardiographic signs of heart muscle damage in RA and other collagenoses are considered exclusively as manifestations of myocarditis. This position is also supported by the results of morphological studies, diffuse myocarditis and cardiosclerosis as the outcome of rheumatoid myocarditis in 28 (73%) of 38 RA patients. Except in rare cases when granulomas are found, rheumatoid myocarditis is nonspecific and histological examination reveals foci of infiltration of the heart muscle by lymphocytes, histiocytes and plasma cells. Foci of nonspecific inflammatory infiltration are located in the subendocardial and subepicardial layers of the myocardium, as well as near the mitral valve. Granulomas in the heart muscle can be detected only in isolated cases, while granulomatous myocarditis is usually combined with focal nonspecific interstitial myocarditis or foci of myocardial fibrosis. The most serious defeat myocardial infarction is observed in severe and rapidly progressing RA, when diffuse interstitial myocarditis is found on autopsy, often histologically manifested by necrotic degeneration of muscle fibers. Numerous clinical and anatomical comparisons have shown that focal myocarditis in the vast majority of patients is almost asymptomatic, does not lead to the development of congestive heart failure and is often an accidental finding at autopsy. Absence of clinical manifestations of heart damage in the presence of objective signs of pericardial effusion, valvular lesion, etc. allowed a group of authors propose the term "silent rheumatoid heart disease" ("silent rheumatoid heart disease").

Coronary arteries can also be involved in the inflammatory process, especially in RA patients with generalized rheumatoid vasculitis. Coronariitis, like other manifestations of rheumatoid carditis, is mainly described by pathologists. Thus, rheumatoid coronariitis in 7 out of 38 deceased RA patients, and none of them had clinical manifestations of coronary insufficiency. They also provide data on changes in the architectonics of coronary vessels detected during post-mortem coronary angiography in RA patients. Various authors found coronary vasculitis at autopsy in an average of 20% of RA patients. The outcome of rheumatoid coronariitis there may be sclerosis of the coronary arteries, narrowing of their lumen.

In the vast majority of cases, rheumatoid coronariitis is asymptomatic. The differential diagnosis between coronariitis and coronary heart disease remains difficult, since modern instrumental studies do not always allow us to answer this question. It is assumed that total forms of rheumatoid coronariitis may manifest as myocardial infarction. One of the clinical manifestations of rheumatoid coronariitis and myocarditis may be various disorders rhythm and conduction. Their cause is explained by lymphohistiocytic infiltration of the Gis system and localization of rheumatoid granulomas in the conduction system of the heart. At the same time, the frequency, nature and pathogenesis of rhythm disturbances in rheumatoid heart disease have not been fully studied.

MATERIALS AND METHODS

70 patients (82% of women, 18% of men) with a reliable diagnosis of RA according to the criteria of ARA were examined. The age of the patients averaged 46.9 ± 1.2 years. At the time of examination, 68.6% of patients had a seropositive variant of RA, 80% of patients had extra-articular manifestations. Radiological changes and the severity of functional insufficiency of the joints corresponded to the duration of the disease. Along with general clinical methods, all patients underwent 2DECHOCG studies, daily monitoring of the ECG by Holter.

RESULTS and DISCUSSION

When registering a resting ECG, cardiac arrhythmias in the form of a single ventricular extrasystole were detected (IE) in 12.6%, single atrial extrasystoles were recorded in 17.1% of patients. Conduction disturbances in the form of incomplete blockade of the right or left leg of the Gis bundle were noted in 5.7% and 2.9% of patients, respectively. With an increase in RA activity, there is a significant increase in signs such as tachycardia (from 11% with a minimum degree of RA activity to 22% with a high degree of activity, respectively). A similar trend was noted in the analysis of such an indicator as bradycardia (2.3 and 11.1% with medium and high activity, respectively) and especially ventricular extrasystole, which was not noted at all in the group of patients with minimal RA activity, and with medium and high activity, respectively, was observed in 11.6 and 44.4% of patients ($p < 0.05$). Nonspecific myocardial changes in the form of inversion of the T wave in the thoracic leads occurred in 8.6% of patients. Scarring of the myocardium and ST segment changes were not detected in any case. Signs of ischemic changes in the resting ECG in The form of ST segment depression was not observed by us in any RA patient. When analyzing the results of daily ECG monitoring, not a single episode of pain-free myocardial ischemia was detected in any RA patients of different genders, ages and with different process activity, which, together with the absence of documented episodes of angina pectoris, as well as significant risk factors for coronary artery disease, indicates the absence of clinical manifestations of coronary

atherosclerosis in them. Cases of episodes of flickering, including paroxysmal, persistent and permanent (ACC/AAC/EOC, 2001) No forms were detected in RA patients.

Supraventricular arrhythmias in the form of supraventricular extrasystole were detected in 47.1% of RA patients. Ventricular extrasystoles were diagnosed more often than other cardiac arrhythmias in our study with daily ECG monitoring in 65.7% of RA patients. Among ventricular arrhythmias, extrasystole of high gradations, such as paired RE, was detected in 48.6%, episodes of unstable ventricular tachycardia (LVT) - in 5.7% and early "R on T" RE - in 11.4% of patients.

The tendency of significantly more frequent detection of cardiac arrhythmias in RA was also noted by us when analyzing the frequency of detection of such arrhythmias of high gradations as group RE and early RE of the "R on T" type and paroxysms of unstable ventricular tachycardia. In 19.0% of patients in this group, we noted a combination of these rhythm disturbances. There was a clear trend of an increase in the number of ventricular arrhythmias with an increase in RA activity, especially with regard to ventricular extrasystoles of the "R on T" type. Thus, in patients with a high degree of activity, compared with patients with a minimal degree, twice as many paired RE were registered; early RE types "R on T" were detected only at medium and high levels of activity, and at minimal activity were not recorded at all.

In our study, patients with systemic manifestations of the disease also showed a tendency to increase ZHE, including high gradations, although significantly insignificant. At the same time, data on reliable the increase in the number of ventricular arrhythmias, including high gradations, in patients with seropositive RA in contrast to the seronegative variant of the disease ($p < 0.05$). This is probably due to active inflammatory processes in the myocardium in this category of patients. There were no significant differences in the frequency of detection and the number of RE per hour, depending on the gender of RA patients.

It is known that with increasing age of patients, the causes for electrical instability of the myocardium become more, but in our study there was no tendency to increase the frequency of detection and the number of arrhythmias in an hour with an increase in the age of patients and the duration of RA. There was also no significant change in the number of extrasystoles depending on the radiological stage of RA. In our work, we observed the development of pericarditis without any clinical manifestations in 9 (12.9%) patients with RA, of which 7 patients had exudative pericarditis according to EchoCG data; at the same time, the amount of effusion in all patients was small and did not cause any hemodynamic disorders. In 2 patients with RA, only thickening of the pericardial leaves to 6.5 mm was noted. In 5 patients with

this the RA group was seropositive, in 4 - seronegative. In the clinical picture of RA in all patients, along with involvement in the process of the pericardium, other extra-articular manifestations were detected: weight loss (22.2%), fever to subfebrile figures in the afternoon (44.4%), anemia syndrome (44.4%).

During the echocardiography, the involvement of the valvular endocardium in the pathological process was revealed. It was manifested by diffuse thickening, uneven surface of the valve flaps and multi-contour images. At the same time, the mitral valves were changed in 18 (25.7%) patients, in 5 (7.1%) - mitral and aortic valves.

CONCLUSION

Simultaneous detection of ventricular extrasystoles of high gradations in combination with pericarditis was noted. We examined 10% of RA patients, which may indicate current myopericarditis in patients of this subgroup. In another 15.7% of patients, marked arrhythmias (IE of high gradations) were combined with signs such as damage to the endocardium of the valves, high activity of the disease, which may also indicate heart damage in RA of an inflammatory nature. Since no signs of chronic heart failure or cardiomegaly were diagnosed in patients of this subgroup, we assume that cardiac arrhythmias can be considered within the framework of the current focal myocarditis.

Thus, in 25.7% of RA patients, cardiac arrhythmias were accompanied by involvement of the endocardium and/or pericardium in the process, which may indicate subclinically ongoing rheumatoid carditis.

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