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ХРОНИЧЕСКАЯ СЕРДЕЧНАЯ НЕДОСТАТОЧНОСТЬ У БОЛЬНЫХ РАННИМ РЕВМАТОИДНЫМ АРТРИТОМ

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АННОТАЦИЯ

Ревматоидный артрит - системное воспалительное заболевание соединительной ткани с преимущественным поражением мелких суставов по типу эрозивно-деструктивного полиартрита неясной этиологии со сложным аутоиммунным патогенезом. Заболевание характеризуется высокой инвалидизацией (70%), которая наступает довольно рано. Основными причинами смерти от этого заболевания являются инфекционные осложнения и почечная недостаточность. Ревматоидный артрит широко распространен во всем мире, и все этнические группы подвержены ему. Хроническая сердечная недостаточность - клинический синдром при некоторых заболеваниях, сопровождающийся характерными симптомами (одышка, снижение физической активности, усталость, отеки и т.д.), связанными с недостаточной перфузией органов и тканей в состоянии покоя или во время физической нагрузки, сопровождающимися задержкой жидкости в организме и ее накоплением в мягких тканях.

Ключевые слова: ревматоидный артрит, хроническая сердечная недостаточность, фракция выброса, левый желудочек.

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CHRONIC HEART FAILURE IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS

ANNOTATION

Rheumatoid arthritis is a systemic inflammatory disease of connective tissue with a predominant lesion of small joints by the type of erosive-destructive polyarthritis of unclear etiology with a complex autoimmune pathogenesis. The disease is characterized by high disability (70%), which occurs quite early. The main causes of death from the disease are infectious complications and renal failure. Rheumatoid arthritis is widespread all over the world and all ethnic groups are susceptible to it. Chronic heart failure is a clinical syndrome in some diseases, accompanied by characteristic symptoms (shortness of breath, decreased physical activity, fatigue, edema, etc.) associated with inadequate perfusion of organs and tissues at rest or during exercise, accompanied by fluid retention in the body and its accumulation in soft tissues.

Keywords: Rheumatoid arthritis, chronic heart failure, ejection fraction, left ventricle

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ERTA REVMATOID ARTRITI BO'LGAN BEMORLARDA SURUNKALI YURAK YETISHMOVCHILIGI

ANNOTATSIYA

Revmatoid artrit – etiologiyasi noma'lum murakkab autoimmun patogenezli eroziv-destruktiv poliartrit tipida kichik bo'g'imlarning zararlanishi ustunligi bilan kechuvchi biriktiruvchi to'qimaning tizimli yallig'lanish kasalligi. Kasallik ko'p hollarda erta nogironlikka olib keladi (70%). Kasallik tufayli o'limning asosiy sabablari infeksion asoratlar va buyrak yetishmovchiligidir. Revmatoid artrit butun dunyoda keng tarqalgan va barcha etnik guruhlar bu kasallikka moyil. Surunkali yurak yetishmovchiligi ba'zi kasalliklarda klinik sindrom bo'lib, nafas qisishi, jismoniy faoliyatning pasayishi, charchoq, shish asosiy xarakterli belgilar hisoblanadi. Organizm yumshoq to'qimalarida suyuqlik to'planishi bilan birga kechadi.

Kalit so'zlar: revmatoid artrit, surunkali yurak yetishmovchiligi, chap qorincha.

The prevalence is 0.5-1% (up to 5% in the elderly) in developed countries. From 5 to 50 people per 100,000 population get sick every year. The average age of onset of the disease is 40-50 years for women and slightly more for men. Women get sick 3-5 times more often than men.

The total mortality of patients with any CHF is 6% per year. A distinctive feature of a patient with HF is comorbidity, so 60% have coronary heart disease, 36% have atrial fibrillation, 34% have type 2 diabetes mellitus, 36% have chronic kidney disease, 43% have a history of myocardial infarction.

Rheumatoid arthritis (RA) is characterized by a twofold increase in morbidity and mortality associated with chronic heart failure (CHF). At the same time, the prevalence of CHF among RA patients is significantly underestimated.

In RA, CHF with a preserved ejection fraction (LV) of the left ventricle (LV) prevails. The use of clinical diagnostic criteria can lead to hyper- or underdiagnosis of CHF in RA patients. Systolic dysfunction assessed by LVEF is rarely detected in RA and does not reflect the actual frequency of myocardial dysfunction. Echocardiography (ECHO-KG) with tissue Dopplerography (TDG) and visualization of myocardial deformity, magnetic resonance imaging (MRI) of the heart in RA revealed a high frequency of CHF with preserved LV LV, LV remodeling and hypertrophy, preclinical systolic and diastolic dysfunction. The main causes of premature mortality from cardiovascular diseases are progressive atherosclerosis, the development of chronic heart failure (CHF), sudden cardiac death. However, a 10-year prospective observational study revealed that achieving low RA disease activity led to a 35% reduction in cardiovascular risk (acute coronary syndrome, cerebral stroke/transient ischemic attack, peripheral artery disease, CHF).

Material and methods

CHF was detected in 24 (33%) patients with early RA. 22 patients were included in this study. Two patients dropped out due to the lack of echocardiography (EchoCG) data in dynamics. Most patients were women – 17 (77%). All patients were examined by a cardiologist, daily monitoring of electrocardiogram and blood pressure (BP), EchoCG, duplex scanning of carotid arteries was performed. According to the recommendations of the Uzbekistan Society of Cardiology, an assessment of traditional risk factors for cardiovascular diseases was carried out. The diagnosis of CHF was verified in accordance with the recommendations the diagnosis and treatment of chronic heart failure society of specialists in heart failure when the patient has four key criteria: characteristic symptoms and/or signs of heart failure (shortness of breath, fatigue, limited physical activity, swelling of the ankles), objective signs of heart dysfunction according to Echocardiography with tissue Doppler and the level of Pro-brain natriuretic peptide b-type (N-terminal propeptide (NT-proBNP), more than 125 PG/ml). In addition, electrocardiography and lung radiography were performed. The 6-minute walk test was not performed due to limited mobility of patients with RA.

Echocardiographic examination was performed according to the recommendations of the American Society of Echocardiography (American Society of Echocardiography - ASE). Diastolic dysfunction was determined in accordance with the Recommendations for determining the diastolic function of the left ventricle (LV). According to the principles of the "treatment to goal" strategy, all patients were initiated methotrexate (MT) therapy with a rapid increase in the dose to 30 mg per week subcutaneously. With insufficient efficiency of MT through For 3 months, a genetically engineered biological drug (GIBP), mainly an inhibitor of tumor necrosis factor-alpha (TNF-α), was added to therapy. The dynamics of the surveyed 22 patients with RA, a complex of examinations like the primary one was carried out. After 18 months in remission and low activity of the disease there were 10 (45%) patients, of which 6 (60%) patients underwent MT therapy in combination with GIBP (adalimumab, certolizumab pegol). At the time of inclusion in the study, nonsteroidal anti-inflammatory drugs were taken 8 (36%) patients with early RA. Cardioprotective drugs were regularly taken by 22 (100%) patients. At the outpatient stage, cardioprotective therapy did not change.

Results

Initially, 21 (95%) patients had CHF with preserved ejection fraction (EF), and 1 patient had CHF with reduced EF. 6 (27%) patients had functional class I (FC) according to NYHA (New York Heart Association Functional Classification – Classification of the New York Cardiological Association), 15 (68%) - FC II, 1 (5%) – FC III. After 18 months, she was observed positive dynamics in the form of improvement of clinical symptoms (decreased severity of dyspnea, peripheral edema), echocardiographic indicators (decrease in the size of the left atrium and its index of end-systolic volume, IVRT (isovolumic relaxation time - isovolumic relaxation time), LV diastolic function. There was no decompensation of CHF. Initially, target blood pressure levels were achieved in 12 patients (55%). After 18 months, 13 (59%) patients had systolic and diastolic blood pressure levels in the target range.

LV myocardial diastolic function was normalized in 7 (32%) patients. In all cases, the target blood pressure level, remission (n=5) and low disease activity (n=2) were achieved. Patients with RA and CHF with normalized LV diastolic function were more likely to receive combination therapy with MT and GIBP - 5 (71%) than monotherapy with MT.

In patients with RA and CHF, the level of NT-proBNP decreased from 192.2 [151.4; 266.4] to 114.0 [90.4; 163.4] pg/ml, normalization of its level was detected in 16 out of 22 (73%) patients against the background of achieving remission or low RA activity. Patients with persistent elevated NT proBNP values had moderate or high disease activity.

Clinical manifestations of CHF regressed in 5 (22%) of 22 patients, LV diastolic function and the level of NT-proBNP normalized.

Discussion

Our study for the first time showed positive dynamics of clinical manifestations of CHF, LV diastolic dysfunction and NT-proBNP levels in patients with early RA and CHF on the background of antirheumatic therapy according to the strategy "treatment to goal achievement" during 18 months of follow-up.

Unlike patients with CHF in the general population, patients with RA suffer mainly CHF with preserved PV, which is caused by systemic inflammation and endothelial dysfunction. As is known, the leading factor in the pathogenesis of RA is the circulation of pro-inflammatory cytokines with the development of inflammation in the joints. It is also proved that increased secretion of TNF-α, interleukin 1 (IL-1), IL-6, IL-18, chemokines affect the development of CHF, mainly with preserved PV. In RA, a high level of TNF-α not only causes the destruction of joints, but also acts systemically, affecting the work of the heart and contributing to the development of ventricular dysfunction of the heart.

The positive effect of antirheumatic therapy on the course of CHF in patients with early RA may be due to the blockade of the "cytokine storm". Several experimental studies have demonstrated that cytokines can modulate myocardial function through various mechanisms, including stimulation of hypertrophy and fibrosis by direct action on cardiomyocytes and fibroblasts, impaired myocardial contractility, affecting intracellular calcium transport and signal transduction via beta-adrenergic receptors, induction of apoptosis and stimulation of genes involved in myocardial remodeling.

Positive results of the use of MT in patients with RA and CHF were obtained. Methotrexate is recognized as the gold standard of treatment of RA, due to its immunosuppressive properties, it leads to a decrease in destructive processes in the bones, slowing down the atherosclerotic process and reducing the risk of cardiovascular complications. Against the background of MT therapy, there was a decrease in the risk of all cardiovascular complications and heart attack myocardium in RA patients by 28 and 19%, respectively. According to the results of a study conducted by K. Gong et al., in patients with CHF without RA on the background of therapy MT and reduction of proinflammatory cytokines in the blood showed an improvement in FC by NYHA and a test with a 6-minute walk.

Previously, attempts were made to use GIBP for the treatment of CHF in patients without RA. However, the use of TNF-α inhibitors in this cohort of patients led to an increase in CHF decompensation and mortality. It is worth noting that in the above studies, the doses of

etanercept and infliximab were higher than those recommended for use in RA patients.

In our study, the normalization of diastolic function was influenced not only by remission and low activity of the disease, but also by the achievement of the target blood pressure level. LV diastolic function was normalized only in patients with target blood pressure levels. It is well known that with an increase in blood pressure, the load on the LV myocardium increases, accompanied by cardiomyocyte hypertrophy, as well as an increase in collagen content and fibrosis, followed by myocardial remodeling, apoptosis of its cells and violation of systolic and diastolic LV function.

Conclusion

In patients with early RA with CHF, there is an improvement in the clinical course of CHF, LV diastolic function, as well as a decrease in the level of NTproBNP against the background of antirheumatic therapy carried out according to the "treatment to goal" strategy.

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