

ARTERIAL HYPERTENSION IN RHEUMATOID ARTHRITIS*Kamolova Diyora Djamshedovna**Assistant of Samarkand State Medical University**Khusainova Munira Alisherovna**Assistant of Samarkand State Medical University**Sultonov Ilkhom Islomovich**PhD., Assistant of Samarkand State Medical University***ABSTRACT**

The aim is to assess the prevalence and risk factors of arterial hypertension (AH) in young and middle-aged rheumatoid arthritis (RA) patients.

Material and methods. 222 RA patients (34% with early RA) without concomitant cardiovascular diseases were examined. The average age was 47 ± 9.7 years; men were 15%; 60% of patients were seropositive for rheumatoid factor (RF), the average value of DAS 28 was 5.77 ± 1.1 , HAQ-DI was 1.58 ± 0.7 . Associations between risk factors and hypertension were analyzed using logistic regression models adjusted for gender and age.

Results. Hypertension was found in 153 (69.4%) patients (55% in early RA). In 56.3% of patients, an increase in blood pressure was first recorded after the debut of RA. With hypertension in RA, age (odds ratio [OR] 2.06; 95% confidence interval [CI] 1.51–2.81), seropositivity in the Russian Federation (OR=3.05; 95% CI 1.67–5.57), abdominal obesity (OR=3.82; 95% CI 1.89–7.71), body mass index (BMI; OR= 1.15; 95% CI 1.07–1.24) and long-term prednisone intake (OR = 1.17; 95% CI 1.03–1.33). In early RA, the predictors of hypertension were seropositivity in RF (OR=4.62; 95% CI 1.67–12.82), RF titer (OR=1.43; 95% CI 1.04–1.96), the number of swollen joints out of 28 (OR=1.14; 95% CI 1.03–1.27), DAS 28 (OR=1.64; 95% CI 1.001–2.67), HAQ-DI (OR=3.14; 95% CI 1.19–8.25) and BMI (OR=1.14; 95% CI 1.01–1.29).

Conclusion. Hypertension is widespread in patients with RA, including in early RA. In more than half of cases, hypertension develops against the background of RA and is associated with traditional risk factors, the presence of RF and long-term use of prednisone. The contribution of RA characteristics to the development of hypertension is most clearly seen in early RA. The results obtained indicate the need for early diagnosis and effective treatment of hypertension in RA with adequate control of inflammatory activity.

Keywords: rheumatoid arthritis, arterial hypertension, risk factors

INTRODUCTION

In the population of patients with rheumatoid arthritis (RA), arterial hypertension (AH) is one of the most common risk factors and is associated with an unfavorable prognosis for the development of cardiovascular diseases and death from cardiovascular causes. Most studies indicate a multifactorial genesis of hypertension in RA, due to the contribution of traditional risk factors for hypertension and characteristics of the underlying disease. In addition to traditional risk factors and systemic inflammation, pharmacotherapy of RA may be an additional factor determining the development of hypertension in RA. However, the relative contribution of these factors to the development of hypertension in RA has not been definitively determined. In addition, the prevalence and risk factors of hypertension in early RA have not been sufficiently studied.

The aim of the study was to assess the prevalence of hypertension among young and middle-aged RA patients and identify risk factors hypertension in RA in general and in early RA in particular.

MATERIALS AND METHODS OF RESEARCH

Seropositive RA was observed in 60% of cases, and erosive arthritis was observed in 73% of cases. 41% of patients had extra-articular manifestations of RA. The average value for DAS 28 was 5.77 ± 1.1 , HAQ-DI – 1.58 ± 0.7 . The majority of patients (87%) received basic therapy, of which 69% received methotrexate at a dose 10-25 mg/week. Prednisone at a dose of 10.16 ± 7.26 mg/ day was received by 55% of patients. The complex of laboratory studies included the determination of serum levels of rheumatoid factor (RF) and C-reactive protein (CRP) by latex agglutination, total cholesterol concentration and triglycerides. During the clinical examination of patients, the presence of the following risk factors was determined: smoking, hypercholesterolemia (total cholesterol >5 mmol/L), obesity [body mass index (BMI) >30 kg/m²], abdominal obesity (waist size >102 cm in men and >88 cm in women), family history of cardiovascular diseases. In accordance with the clinical recommendations of the Association of Rheumatologists of Russia, the HAQ-DI index was calculated. The presence of hypertension was detected with an increase in systolic blood pressure (SAD) >140 and/or diastolic (DAD) >90 mmHg. based on the results of three or more measurements or when taking antihypertensive drugs. The results are processed in a software package Statistica 6.0 (StatSoft, USA) using the t-test for independent samples, Mann–Whitney criteria and the criterion χ^2 . Associations between risk factors and hypertension were analyzed using gender- and age-adjusted logistic regression models. The differences were considered significant at $p < 0.05$. The results are presented in the form $M \pm \sigma$, where M is the arithmetic mean, σ is the standard deviation.

THE RESULTS AND THEIR DISCUSSION

In the present study, a high prevalence of hypertension was shown in a large cohort of young and middle-aged RA patients. Thus, hypertension was detected in 153 (69.4%) of RA patients examined. In the group of patients with RA with hypertension, the SAD index averaged 148.9 ± 18.3 mmHg, DAD – 92.7 ± 10.7 mmHg, in the group of patients with RA without hypertension – 119.3 ± 11.8 and 76.7 ± 7.9 mmHg, respectively ($p < 0.001$ for comparisons of SAD and DAD between groups). According to various data, from 30 to 80% of RA patients in Uzbek and foreign populations have concomitant hypertension. An analysis of the literature data on the epidemiology of ASu in RA patients shows that a large range of values is determined by differences in the patient population by age and gender, activity, severity and duration of RA, the presence of comorbid conditions and features of pharmacotherapy of RA. The results of our study indicate a high incidence of hypertension in a subgroup of patients with early RA (55%), which coincides with data from foreign population studies and confirms the observations of other authors about an unfavorable cardiovascular risk profile in patients with RA already at the beginning of the disease. The duration of hypertension in the general RA group averaged 6.96 ± 6.64 years. At the same time, in 67 (43.7%) patients, an increase in blood pressure was first recorded before and in 86 (56.3%) after the RA debut. Only 80 (52%) RA patients with concomitant hypertension received treatment with antihypertensive drugs, of which 60 (39%) were treated systematically and 20 (13%) – episodically. These results confirm the data on a relatively low percentage of RA patients receiving treatment for hypertension and suboptimal blood pressure control in RA. As in the V.F. Panoulas study et al. , in our patients, the most commonly used group of drugs for the treatment of hypertension in RA were angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor blockers, which were taken by 52% of patients receiving antihypertensive therapy, beta-blockers (29%) and thiazide-like diuretics were used somewhat less frequently (29%). Calcium channel blockers (including in combination with ACE inhibitors and beta-blockers) were received by 14% of patients. Compared with patients with RA without hypertension, patients with RA with hypertension were older ($p = 0.001$), among them there were more patients with seropositive RA ($p = 0.02$). According to other characteristics of RA and the nature of pharmacotherapy of RA, no significant differences were found between the groups, although it is possible to note a slightly longer duration of prednisone intake in patients with RA with hypertension compared with RA without hypertension, but these differences had only borderline statistical significance ($p = 0.06$). When analyzing the prevalence of cardiovascular risk factors in RA patients, depending on the presence of hypertension, it was shown that in the group of RA patients with hypertension, compared with the group of RA without hypertension, BMI values were higher (27.1 ± 4.6 and 24 ± 4.3 kg/m², respectively, $p < 0.001$) and waist size (88.1 ± 11.67 and 81.18 ± 11.97 cm, respectively; $p = 0.003$),

there were more people with a BMI >30 kg/m² (28 and 8%, respectively; p<0.001). There were no significant differences in the prevalence of smoking, hypercholesterolemia, a burdened hereditary history of cardiovascular diseases, and total cholesterol levels and triglycerides in RA patients with hypertension.

To clarify the mechanisms of hypertension in RA, we performed a regression analysis of hypertension risk factors in RA patients, including those with early RA. In the general group of RA patients, older age, abdominal obesity, higher BMI (especially BMI >30 kg/m²) and a longer duration of prednisone intake were associated with an increased risk of hypertension. A predictor of hypertension in early RA from among the traditional factors the risk was BMI. These results are consistent and consistent with the previously described associations of age, obesity, and glucocorticoid therapy with the development of hypertension, including in RA patients. With the exception of the duration of prednisone administration, we did not note an association of other characteristics of RA pharmacotherapy with the development of hypertension in RA, including in early RA, the association of seropositivity in with the presence of hypertension in the general group of RA patients in our study is consistent with the generally accepted point of view about adverse the effect of seropositivity by RF and/or antibodies to cyclic citrullinated peptide on the risk of cardiovascular morbidity and mortality in RA and other rheumatic diseases. In the group of patients with early RA, there was a more pronounced relationship between the presence of hypertension and indicators of inflammatory activity than in the general group of patients with RA. Thus, significant predictors of hypertension in early RA were seropositivity in the and an increasing titer of the a greater number of swollen joints out of 28, and higher values DAS 28 and HAQ-DI. These data confirm the importance of inflammation and autoimmune disorders for the development of hypertension and cardiovascular events in the general population and in the population of RA patient. The association of an increasing RF titer with the presence of hypertension in early RA indicates the "dose-dependent" nature of this association, confirming the data of some earlier studies on an increased risk of adverse cardiovascular events with an increase in RF titer.

CONCLUSIONS

Thus, the results of this study indicate that hypertension is widespread in patients with RA, including in early RA. Less than half of the patients receive systematic antihypertensive therapy. In more than half of cases, hypertension develops against the background of RA and is associated with the presence of traditional risk factors (age, obesity), seropositivity by RF and with longer prednisone intake. The contribution of inflammation and autoimmune disorders to the development of hypertension is most clearly seen in patients with early RA, which have seropositivity, an increasing titer RF, a greater number of swollen joints (out of 28), higher values of DAS 28 and HAQ-

DI are reliable predictors of hypertension. The results obtained indicate the need for early diagnosis and effective treatment of hypertension in RA with adequate control of inflammatory activity.

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