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CLINICAL AND BIOCHEMICAL FEATURES OF RHEUMATOID ARTHRITIS IN COMBINATION WITH ARTERIAL HYPERTENSION, TYPE 2 AND ABDOMINAL DIABETES OBESITY

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Abstract

The features for rheumatoid arthritis (RA) and RA in combination with hypertension, type 2 diabetes and abdominal ozhyreniem depending on clinical and laboratory parameters. Clinic of rheumatoid arthritis in patients with metabolic syndrome is characterized by severe course, a high degree of activity and poor quality of life compared with patients with rheumatoid arthritis without comorbid pathology.

Keywords: rheumatoid arthritis, diabetes mellitus type 2, arterial hypertension, abdominal obesity, clinical features.

Introduction. Rheumatic joint diseases (RJD) are considered as one of the most common pathologies throughout the world, as well as medical and socio-economic problems of modern society. They are reducing quality of life and lead to significant health care costs and negatively affect the national economy [1, 11].

According to the World Health Organization (WHO) first place RA ranks among all joint diseases. World wide on rheumatoid arthritis (RA) approximately 1% of the world's people are sick without a pronounced geographic or climate influence. Getting sick with RA in Ukraine according to official data medical statistics for 2013 is more than 4 thousand people, and the prevalence in absolute terms is 115.5 thousand patients [2, 14]. You can get sick with RA at any age starting from 16 years (juvenile RA), but the peak diseases occur at the age of 40-50 years. Women suffer from RA 2-4 times more often more often than men, the average ratio of women to men is 3:1 [7].

RA is one of the most common and severe chronic joint diseases and in most patients leads to rapid loss temporary and permanent working capacity, reduced life expectancy [3, 12]. Almost 50% of patients with RA become disabled within the first 5 years, and after 20 years – more than 90%, a third of whom are completely disabled [10].

The problem of comorbid conditions in patients with RA is relevant for modern practical rheumatology, since the possible influence concomitant diseases on the course and results of treatment of RA remains little studied [9].

Metabolic syndrome in RA dedicated only to individual robots, in particular, Korochina I.E. that sovavt. (2006) who showed that among patients on RA, the above-mentioned syndrome, is registered in 27% of people with predominance of hypertension, dyslipidemia and diabetes mellitus type 2. [4, 13]

RA in combination with abdominal obesity (AO), diabetes mellitus type 2 (DM 2) and arterial hypertension (AH) is common and unfavorable prognosis of the disease.

Purpose: To analyze the features of the course of rheumatoid arthritis (RA), and also RA in combination with arterial hypertension, diabetes mellitus type 2 and abdominal obesity depending on the clinical picture and laboratory tests indicators.

Objectives:

1. To study the clinical and biochemical parameters of the abdominal obesity, arterial hypertension and type 2 diabetes mellitus in patients with RA.

2. To find out the relationship between the severity of RA depending on the presence comorbid pathology.

Material and methods. 73 patients were examined for RA, who were on in patient treatment in the rheumatology department of the regional clinical hospital in Chernivtsi, as well as the Chernivtsi regional endocrine dispensary and rheumatology department of city hospital No. 2. There are 30 patients from them suffering from RA (group 1), 28 patients with RA associated with arterial hypertension, diabetes mellitus type 2 and abdominal obese (2nd group), and 15 practically healthy (control group). Sick for gender characteristics did not differ statistically from each other. Average the age of the patients was 42.8 ± 6.3. The diagnosis of RA was established in accordance with ACR/EULAR criteria, 1987/2010 Quantitative assessment of RA activity was carried out using the DAS 28 index (Disease Activity Score), recommended EULAR, CRP and erythrocyte sedimentation rate (ESR) [5]. Assessment of the intensity of pain in the joints (by the patient) and their functional abilities (by the patient and the doctor) were analyzed using visual analogue scales (VAS). Morning stiffness and duration were also assessed diseases. In order to assess the quality of life of patients suffering

from RA, we HAQ SF 36 questionnaires were used [6, 8].

The diagnosis of metabolic syndrome was established according to WHO criteria (1998), ATP III criterion (2001), metabolic syndrome criterion International Diabetes Federation (ID) 2005.

Anthropometric measurements were performed to determine metabolic syndrome measurements: measured height, weight, waist size, hip size, calculated mass index body (BMI = body weight/height (m)2. Level of insulin resistance (IR) calculated using the HOMAIR formula. Statistical processing of received research results were carried out using a statistical software package Statistica 6.0 with evaluation of mean values (M) and their error (m). The differences were considered significant at $p < 0.05$.

Results and its discussion.

Our research data showed that patients with RA are characterized by common symptoms: weakness, decreased appetite, high fever (up to 40°C), increased sweating, asthenia, sleep disturbances. These symptoms are present in approximately 89% patients with rheumatoid arthritis. For rheumatoid arthritis in combination with hypertension, AO and type 2 diabetes, the above symptoms are much more common, more than 96%. Together with common symptoms for RA are characteristic articular syndrome (pain, swelling, stiffness). In later stages of the disease, fibrous or cystic ankylosis and contractures which lead to permanent deformation of the joint.

We found that in patients with rheumatoid arthritis associated with hypertension, diabetes mellitus 2 and AO articular syndrome were more common than in patients with RA 73.9% and 65.3% of cases, and joint deformity 47.4% and 41.3%. We also explored morning stiffness did not differ significantly between groups.

The patients we examined also encountered extra-articular manifestations of RA which accounted for 36.8% of cases, and in combination with hypertension, AO and type 2 diabetes 38.1%. Among our patients, the most common extra-articular manifestation was rheumatoid nodules – 20.2%, lymphadenopathy – 11.7%, syndrome was less frequently noted Sjogren's syndrome, Raynaud's syndrome, digital arteritis, leg ulcers, scleritis, etc.

Table 1

Clinical and demographic indicators in patients with RA and RA associated with hypertension, type 2 diabetes and AO

Indicators	Healthy n=15 (20.5%)	RA n=30(41,1%)	RA with hypertension, type 2 diabetes and AO n=28 (38.4%)
Age, years	49,3±6,3	51,2±8,1	54,2±4,1
man woman	7 (46,7) 8 (53,3)	19 (63,3) 11 (36,7)	15 (53,6) 13 (46,4)
Weight, kg	73,4±3,4	71,6±6,42	92,8±10,2*
Height, cm	166,1±5,22	165,89±5,38	168,32±6,47
Body mass index, kg/m2	25,9±4,6	22,4±4,53	31,2±1,03*
Waist	77,43±1,26	76,8±1,42	93,22±2,05*
Systolic arterial pressure Diastolic arterial pressure	124,62±2,22 73,5±1,18	123,5±1,03 72,6±1,28	156,9±1,97* 88,13±1,26*

Analyzing gender characteristics between patients of the corresponding groups

you can see that there is no statistically significant difference between them. (Table 1). In RA patients with hypertension, type 2 diabetes and AO, significantly higher rates were observed weight 92.8 ± 10.2 compared with RA patients 71.6 ± 6.42; waist circumference 93.22 ± 2.05 and 76.8 ± 1.42, and an increase in BMI 31.2 ± 1.03 and 22.4 ± 4.53, as well as significantly increased blood pressure (AP): SAT = 156 .9±1.97 and 123.5±1.03; DAT = 88.13±1.26 and 72.6±1.28.

Table 2

Dynamics of clinical and laboratory data in patients with rheumatoid arthritis in depending on comorbid pathology

Indicators	RA n=30 (51.7%)	RA with hypertension, diabetes 2 and AO n=28 (48.3%)
Index DAS28	3,57±0,12	4,61±0,17*
Index HAQ	1,8±0,5	1,9±0,5
C-reactive protein, mg/l	20,3±2,05	31,42±3,18*
Erythrocyte sedimentation fluidity, mm/h	33,8±9,8	38,1±10,5*
Rheumatoid factor, MO/ml	114,3±16,7	119,1±18,4*
Antibodies to cyclic citrullinated peptide OD/ml	496,5±28,2	823,7±32,6*
Lipid profile, mmol/l total cholesterol Triglycerol Lipoprtetheins of very low strength Low-strength lipoproteins High density lipoproteins	 4,98±0,05 1,64±0,03 0,73±0,05 3,2±0,1 1,08±0,14	 6,1±0,18* 2,13±0,12* 1,04±0,06* 3,72±0,16* 0,79±0,04*
Blood plasma glucose	4,85±6,76	6,27±5,3*
Pain according to the Visual Analogue Scale, points	4	>6*

We carried out an analysis between clinical and biochemical indicators of RA activity and blood lipid spectrum. When analyzing the condition lipid profile of patients with RA and in patients with RA in combination with hypertension, diabetes 2 and AO. It was noticed that a sharp increase in the level of proatherogenic lipids (total cholesterol, low-strength lipoproteins and triglycerol), the difference in indicators is significant. The average for group 1 is - 4.98±0.05, 2 -6.1±0.18; TG: 1st group - 1.64±0.03, 2nd -2.13±0.12; LDL: 1st group - 3.2±0.1, group 2 - 3.72±0.16. RA activity indicators differed significantly: DAS28, C-reactive protein, Erythrocyte sedimentation fluidity, Visual Analogue Scale (Table 2). DAS28 in group 1 was lower than in group 2 (3.57±0.12 and 4.61±0.17); Erythrocyte sedimentation fluidity - 33.8±9.8 and 38.1±10.5; C-reactive protein - 20.3±2.05 and 31.42±3.18. This indicated that the articular syndrome was more pronounced in patients for RA with comorbid pathology.

Conclusions: According to our data, patients with rheumatoid arthritis in combination with hypertension, type 2 diabetes and abdominal obesity were associated with a severe course, a high degree of activity and low quality of life compared to patients with rheumatoid arthritis without comorbid pathology.

Therefore, addressing issues regarding pain reduction, inflammation, stop or slow down the rate of joint damage will help reduce the risk of complications, improve overall prognosis of the course of the underlying disease and improving the quality of life of patients with rheumatoid arthritis with concomitant hypertension, type 2 diabetes and abdominal obesity.

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