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GASTROINTESTINAL INVOLVEMENT IN RHEUMATOID ARTHRITIS: CLINICAL AND MORPHOLOGICAL ASPECTS OF GASTROPATHY

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Resume: *In our study we studied pathology of upper gastrointestinal tract in 74 patients with rheumatoid arthritis: dyspepsia, endoscope findings of upper gastrointestinal mucosa, acidity of the stomach and esophagus. Our data showed a high rate of dyspepsia and endoscope changes in rheumatoid arthritis patients in comparison with control group.*

Keywords:*rheumatoid arthritis (RA), dyspepsia, gastrointestinal tract, acidity, gastropathy.*

RELEVANCE

Rheumatoid arthritis (RA) is one of the most common autoimmune diseases among humans, affecting 0.5–2% of the adult population aged 35–55 years. In Russia, the prevalence of this disease is 0.6% [58,59]. At the preclinical stage, genetic predisposition and environmental triggers increase susceptibility to RA development, activating the immune system not only in the joints but also on the surfaces of mucous membranes [11,12].

According to several authors, the prevalence of RA in the population reaches 1%, classifying it among diseases with economic losses comparable to ischemic heart disease. RA occurs 2–3 times more frequently in women than in men and can begin at any age, although it more often affects the working-age population [5,6,7,15].

Literature data indicate that gastrointestinal tract involvement in rheumatoid arthritis occurs in 13–62% of cases and occupies an important place among the disease manifestations. In patients with joint syndrome, pathology of the gastroduodenal zone is a serious problem because, on one hand, it worsens the course and prognosis of the underlying disease, and on the other hand, it complicates treatment, requiring prolonged therapy, sometimes for months or years, which leads to potentially aggressive effects of drugs on the gastrointestinal tract [1,2,4,8].

Clinical experience shows that during NSAID use, all parts of the gastrointestinal tract can be affected, but the gastroduodenal zone, especially the gastric antrum, is most frequently and severely damaged, presenting with erosions, ulcers, bleeding, and perforations [10,9]. According to reliable

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data, acute gastrointestinal bleeding occurs in approximately 50% of cases, increasing the need for hospitalization sixfold and the risk of death twofold [14].

During NSAID use, the risk of erosive and ulcerative lesions of the gastric mucosa and, less frequently, the duodenum increases 3.9-fold, and the risk of bleeding increases 8-fold [9,3]. Erosive and ulcerative lesions of the gastric and duodenal mucosa with bleeding annually lead to hospitalization of 100–200 thousand patients and cause 10–20 thousand deaths [14,13].

Research Objective: To investigate the clinical and morphological features of gastric lesions in rheumatoid arthritis (RA) and the role of risk factors.

Material and Methods: The study was conducted prospectively in the Rheumatology Department of a multispecialty hospital in the Bukhara Region from January 1 to June 30, 2022. Patients with RA were monitored by the researchers, and all obtained results were analyzed.

A total of 74 RA patients, aged 24 to 76 years, suspected of gastropathy, were included and underwent comprehensive examination. The diagnosis of classic RA was established according to the diagnostic criteria of the American Rheumatology Association (Nasonova V.A., Astapenko M.G., 1989). The mean disease duration was 7.76 ± 0.84 years.

Results and Analysis: Over six months (January–June 2022), 138 patients with rheumatoid arthritis, aged 19 to 76 years, were examined in the Rheumatology Department of the Multispecialty Medical Center of Bukhara Region. Diagnoses were made according to the ACR (1987) and ACR/EULAR (2010) criteria.

Disease activity was assessed using the DAS-28 (Disease Activity Score). Esophagogastroduodenoscopy (EGD) data were used for early detection of gastropathy risk and prediction of disease course. Gastric mucosa involvement was assessed using a modified F.L. Lanza scale, along with barium X-ray examination to evaluate the internal layers of the gastrointestinal tract.

According to the study analysis, of the 138 RA patients, 117 (84.8%) were women with a mean age of 47.7 ± 13.78 years, and 21 (15.2%) were men with a mean age of 54.3 ± 8.46 years. Among the study participants, 25 (18.1%) were aged 20–34 years, 34 (24.6%) were 35–44 years, 22 (15.9%) were 45–50 years, 23 (16.7%) were 51–55 years, 11 (7.9%) were 56–60 years, and 23 (16.7%) were 61–76 years (see Table 1).

Table 1

Clinical Characteristics of Patients with Rheumatoid Arthriti

Indicators	***Main Group***	***Control Group***
Демографические показатели		

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Number of patients (n)	74.	30.
Disability, n (%)	32 (43,2%)	4 (13,3%)
Gender, n (%)		
Women, n (%)	58 (78,4%)	17 (56,7%)
Men, n (%)	16 (21,6%)	13 (43,3%)
Mean age (M±SD), years	52,68±11,42	42,6±10,17
18-44 years (M±SD)	37,06±6,12	32,14±9,35
45-59 years (M±SD)	53,02±7,10	45,02±5,22
60-74 years (M±SD)	65,41±4,67	-
75-90 years (M±SD)	75,33±1,15	-

During the study, to investigate the main characteristics of the patients' disease, the duration of RA, medical and life history, results of general examination, and comprehensive laboratory tests were taken into account (complete blood count, urinalysis, determination of rheumatoid factor, C-reactive protein (CRP), anti-streptolysin O, anti-CCP, blood biochemical analysis: bilirubin, ALT, AST, glucose level, urea, presence of Helicobacter pylori in the blood, creatinine level), coagulation profile, and instrumental examinations (joint X-ray, seronegative and seropositive status, osteodensitometry, esophagogastroduodenoscopy [EGD]). In addition, the DAS-28 index and Visual Analog Scales (VAS) were used (see Table 2).

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Таблица 2

Clinical Characteristics of Patients with Rheumatoid Arthritis

Key Characteristics of the Disease	***Main Group (74)***	***Control Group (30)***
RA Duration, n (%)		
Up to 1 year	3 (4,1%)	2 (6,6%)
From 1 to 5 years	6 (8,1%)	9 (30%)
From 5 to 10 years	17 (22,9%)	14 (46,7%)
More than 10 years	48 (64,9%) ***	5 (16,7%)
Seropositive RA	43 (58,1%)	22 (73,3%)
Seronegative RA	31 (41,9%) **	8 (26,7%)
ESR (mm/h) (M±SD)	29,55±14,42	29,14±11,26
Pain on the VAS scale		
Level (M±SD)	6,94±3,88	7,1±2,29
Disease activity by DAS-28 index		
Level (M±SD)	4,89±0,81*	4,16±1,02
Anti-CCP positive	62 (83,8%) *	23 (76,7%)
Teatment of RA		
NIAC	74 (100%)	-
GCS	24 (32,4%)	4 (13,3%)
BAKV	52 (70,3%) **	30 (100%)

Note: * – significant differences compared with the control group (*p<0.05; **p<0.01; ***p<0.001).

Smoking, as the majority of patients in the study were women (83.4%).10.9%, lcohol consumption 12.7%. Heredity in the women studied tendencies, stressful states showed higher indicators compared to men.Analysis of risk factors for rheumatoid arthritis in patients with age-related stress in the age of 35-44 and 45-50 years, a high level of morbidity, alcohol and smoking is observed in the age of 51-55 and 61-70. was observed to be more widespread in patients of this age compared to patients of the remaining group (3-Table).

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Table 3.
Occurrence of risk factors by age in patients rheumatoid arthritis

Indicators	***Main Group (n=74)***				***Control Group (n=30)***
	18-44 Y years(n=15)	**45-59 years (n=39)**	**60-74 years (n=17)**	**старше 75 years (n=3)**	**18-59 years (n=30)**
Average age M±SD)	37,1±6,12	53,02±7,10	65,4±4,67	75,3±1,15	42,6±10,17
Women	13(86,7%)**	30(76,9%)*	12(70,6%)*	3(100%)***	17(56,7%)
Men	2(13,3%)	9(23,1%)	5(29,4%)	-	13(43,3%)
Inherited	8(53,3)**	20(51,3%)**	1(5,9%)	-	5(16,7%)
unity	13(86,7%)*	31(79,5%)*	9(52,9%)	1(33,3%)	16(53,3%)
Conversation	-	5(12,8%)	-	-	6(20%)
Alcohol	-	6(15,4%)	4(23,5%)	-	11(36,7%)
NSAID, n(%)	15(100%)	39(100%)	17(100%)	3(100%)	-
GCS, n(%)	2(13,3%)	6(15,4%)	13(76,5%)***	3(100%)***	4 (13,3%)
BPVP, n(%)	7(46,7%)	29(74,4%)**	15(88,2%)**	1(33,3%)	30 (100%)
(Helicobacter pylori) positive	2(13,3%)*	6(15,4%)*	5(29,4%)**	1(33,3%)***	1(3,3%)

Note:*- *the difference compared to the comparison group indicators is significant (*-p<0,05; **-p<0,01; ***-p<0,001)*

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Table 4.

Frequency of gastropathy symptoms

Gastropathy symptoms	Number of patients (n=74)	18-44 years (n=15)	45-59 years (n=39)	60-74 years (n=17)	старше 75 years (n=3)
Pain in epigastric region	63(85,1%)	9(60%)	35(85,1%)**	17(100%)****	2(66,7%)
Nausea	42(56,8%)	6(40%)	21(85,1%)**	12(7,6%)	3(100%)**
Heartburn	62(83,8%)	12(80%)	30(85,1%)	17(100%)*	3(100%)
Roughing	56(75,7%)	9(60%)	28(85,1%)*	17(100%)**	2(66,7%)
Meteorism	58(78,4%)	10(66,7%)	29(85,1%)*	16(94,1%)**	3(100%)**
heaviness in epigastric region	19(25,7%)	1(6,7%)	9(85,1%)**	7(41,2%)*	2(66,7%)**

Risk in 74 ((53.6%) patients with suspected gastropathy out of 138 patients

If we consider the factors of heredity, 29 (32.2%) of them have heredity, 10 (13.5%) have heredity.smoking, stress in 54 (73%), alcohol consumption in 5 (6.8%), age over 50 years 43.(58.1%), NSAIDs polypragmacy in 63 (85.1%) patients, NSAIDs+anticoagulants and H. pylori in 31 (41.9%) patients during the examination, a positive result was noted in 4 (5.4%) of them.

Since the majority of patients in the study were women (83.4%), smoking and alcohol consumption accounted for 13.5%. In the women studied, hereditary predisposition, stress conditions, and higher indicators compared to men were observed. When analyzing risk factors in patients with rheumatoid arthritis by age, it was found that stress conditions were more common in individuals aged 45–59 years, while alcohol consumption and smoking were more widespread among individuals aged 18–44 years (Table 5).

Out of 74 patients, 55 (74.3%) underwent esophagogastroduodenoscopy (EGD), which revealed superficial and atrophic changes in the submucosal layer of the gastroduodenal zone of the upper gastrointestinal tract. Nineteen patients over 60 years old (25.7%) refused EGD, so their gastrointestinal tracts were

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examined using a barium contrast radiography. Signs of gastropathy were found in 74 patients (53.6%), and treatment with gastroprotectors alongside NSAIDs was recommended.

Among the dyspeptic complaints, heaviness in the epigastric region, belching, heartburn, nausea, as well as the presence of abdominal pain syndrome were assessed. Clinical examination of RA patients with NSAID-induced gastropathy showed a high frequency of pain and dyspeptic syndromes: 63 patients (85.1%) reported epigastric pain, 62 (83.8%) reported heartburn, 56 (75.7%) reported belching, 19 (25.7%) reported heaviness in the epigastric region, 58 (78.4%) reported flatulence, and 42 (56.5%) reported nausea.

All patients with antral gastritis experienced constant dull, tingling pain in the epigastric region. Since 19 patients (25.7%) refused to undergo EGD, a radiographic examination of the gastrointestinal tract using a barium solution (on a Shimadzu Rodspaid SH10 device) was performed for them. According to the radiographic results, out of these 19 patients, erosion was detected in 9 (47.4%), gastritis in 6 (31.6%), and peptic ulcer disease in 4 (21%)

Table 4.

Dependence of risk factors and FSDS indicators in patients with rheumatoid arthritis

Indicators	Pathological changes in FGDS	
	Main group (n=55)	Control group (n=30)
No risk factor	-	-
one risk factor	-	4 (13,3%)
tu risk factor	16 (29,1%)	9 (30%)
more than three risk factors	39 (70,9%)	17 (56,7%)

Morphological changes in the gastric mucosa were observed in 70.9% of patients with three or more risk factors, in 29.1% of patients with two risk factors, and no morphological changes in the gastric mucosa were detected in patients with only one risk factor.

The disease activity level in patients with rheumatoid arthritis showed a direct correlation with the changes observed in EGD (r = 0.68). Most patients with a high disease activity level exhibited gastric and duodenal ulcers. These findings are a result of high rheumatoid arthritis activity and the widespread use of NSAIDs. Analysis of the control group showed that patients with a low disease activity level did not exhibit any pathological changes according to EGD findings.

Table 5.

Relationship between disease activity level and FGDS changes in patients with rheumatoid arthritis.

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Indicators	Pathological changes in FGDS	
	Main group (n=55)	Control group (n=19)
II- moderate activity DAS-28=3,3-5,1	19(34,5%)	16(84,2%)
III- high activity DAS-28>5,1	36 (65,5%)	3 (15,8%)

Gastropathy symptoms were observed in 34.5% of patients with grade II activated rheumatoid arthritis and 65.5% of patients with grade III activated rheumatoid arthritis, which is 4.1 times more than in patients of the control group.

CONCLUSIONS

1. NSAID-induced gastropathy is more frequently observed in women with the presence of autoaggression factors (stress, heredity, sex, polypharmacy, presence of H. pylori, use of antiplatelet agents), as well as in patients taking NSAIDs for more than five years.
2. NSAID-induced gastropathy is characterized by a discrepancy between clinical manifestations and endoscopic signs of gastric inflammation.
3. Mild clinical manifestations of NSAID-induced gastropathy correspond to pronounced endoscopic and morphological signs of antral gastritis activity.

REFERENCES:

1. Akhrarova F.M. Characteristics of changes in the gastroduodenal zone in rheumatic patients. //Experimental and Clinical Gastroenterology. 2016;134(10):29-31.
2. Balukova E.V. NSAID-induced gastropathy: from understanding the mechanisms of development to developing prevention and treatment strategies. //Russian Medical Journal, 2017;10:697-700.
3. Drozdov V.N. Gastropathies caused by NSAIDs: pathogenesis, prevention, and treatment. //Consilium Medicum, 2005; C:3-6.
4. Kalagova A.V., Ailarova N.R., Panagov Z.G. NSAID-gastropathies in patients with rheumatoid arthritis. //Bulletin of Science and Education, 2019;1(55)/1:97-99.
5. Karimov M.Sh., Mavlyanov I.R., Tukhtaeva N.Kh., Mustafin R.I. Rheumatoid arthritis and gastroduodenal zone lesions (based on retrospective analysis). //Medical Journal of Uzbekistan. Tashkent, 2013;3:83-87.
6. Karimov M.Sh. Some pharmacokinetic parameters of sodium diclofenac in patients with rheumatoid arthritis considering comorbid conditions. / M.Sh. Karimov,

Latin American Journal of Education
www.lajoe.org

N.Kh. Tukhtaeva, M.V. Sibirkin. //Therapeutic Bulletin of Uzbekistan: Scientific and Practical Journal, JSC SEAL MAG. 2020;2:120-125.

7. Karimov M.Sh., Khabilova N.L. State of the gastric mucosal barrier in patients with rheumatoid arthritis associated with NSAID-gastropathy. //Bulletin of Tashkent Medical Academy. Tashkent, 2013;3:35-38.

8. Karimov M.Sh. Lipid peroxidation intensity and antioxidant status of erythrocytes in patients with rheumatoid arthritis associated with Helicobacter infection. / M.Sh. Karimov et al. //Therapeutic Bulletin of Uzbekistan: Association of Therapists of Uzbekistan / Scientific-Practical Journal: JSC SEA.

9. Lapina T.L. NSAID-induced gastropathies: clinical significance, treatment, prevention. //Consilium Medicum, 2001;9:438-442.

10. Maev I.V., Andreev D.N., Dicheva D.T. NSAID-induced gastropathies: pathogenetically based approaches to prevention and therapy. //Pharmateka, 2016;2:49–54.

11. Mazurov V.I., Gaydukova I.Z. Rheumatoid arthritis – basics of diagnosis and treatment (for primary care specialists: general practitioner, therapist): methodological recommendations. 2021; C:1-19.

12. Mazurov V.I., Belyaeva I.B., Trofimov E.A., Samigullina R.R., Melnikov E.S. The role of genetically engineered biologics and targeted drugs in the therapy of rheumatoid arthritis. //Effective Pharmacotherapy, 2019;15(40):36-44.

13. Nasonov E.L., Karateev A.E. Gastric lesions associated with NSAID use. Part 1. //Clinical Medicine, 2000;3:4–10.

14. Prevention and treatment of gastric mucosal lesions caused by NSAID use (NSAID-gastropathy). //Clinical Recommendations. Clinical Pharmacology and Therapy, 2000;9(1):42–44.

15. Tukhtaeva N.Kh. Clinical characteristics of rheumatoid arthritis considering the state of the gastrointestinal tract. / N.Kh. Tukhtaeva, M.Sh. Karimov. //Pediatrics: Scientific and Practical Journal / Ministry of Health of the Republic of Uzbekistan, Tashkent Pediatric Medical Institute. Tashkent, 2020;2:255-261 (Code P14/2020/2).