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EVALUATION OF THE EFFICACY OF A SELECTIVE NON-STEROIDAL ANTI-INFLAMMATORY DRUG IN RHEUMATOID ARTHRITIS

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Abstract

Objective: To evaluate the effectiveness of therapy with celecoxib in patients with rheumatoid arthritis.

Material and methods: The patients under observation were divided into two groups. 25 patients in the first group were prescribed 10 mg of methotrexate as basic anti-inflammatory therapy per week, while 25 patients in the second group were prescribed celecoxib at a dose of 200 mg twice a day in combination with 10 mg of methotrexate per week for basic anti-inflammatory therapy.

Results: In the second group of patients treated with celecoxib, a significant decrease in the number of inflamed and painful joints, ESR, C-reactive protein, VAS, DAS-28 scales, and HAQ index was observed compared to the first group.

Conclusion: It has been established that combined therapy with the drug celecoxib can reduce disease activity more effectively in RA patients compared to monotherapy with methotrexate.

Keywords: rheumatoid arthritis, methotrexate, celecoxib.

Introduction

Rheumatoid arthritis is an autoimmune disease of connective tissue that causes inflammation of the synovial membrane of joints and leads to their destruction [1,2]. In this case, the small joints of the hand and foot are most often affected. The prevalence of rheumatoid arthritis in the population is 0.5-1% [3]. It is twice as common in women as in men. The inflammatory process manifests itself in the form of subjective and objective signs such as joint pain, numbness, and swelling. Currently, there are several groups of drugs that eliminate the aforementioned clinical symptoms of rheumatoid arthritis, leading to stable remission and improved joint mobility. Although non-steroidal anti-inflammatory drugs are used to control the symptoms of arthritis, they have many side effects: gastrointestinal toxicity, including the risk of gastroduodenal ulcers, bleeding, and perforation [5,7].

Celecoxib is a selective nonsteroidal anti-inflammatory drug widely used in the treatment of rheumatoid arthritis. At therapeutic concentrations, celecoxib does not affect prostanoid synthesis due to the fact that it does not inhibit COX-1. As a selective inhibitor of cyclooxygenase II (COX-2), the drug is considered low-toxic to the gastrointestinal tract and is well tolerated by patients. The drug also does not affect platelet aggregation and prolonged blood clotting time. The maximum concentration in the plasma is reached 3 hours after administration. It has a high binding capacity to plasma proteins. The half-life (T1/2) is 11 hours and is metabolized in the liver mainly

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by the CYP2C9 isoenzyme. According to the results of the conducted research, the effect of the drug celecoxib on carcinogenicity, mutagenicity, and fertility is insignificant. This drug can be administered at an average therapeutic dose (200 mg twice a day) regardless of the diet [6, 9, 10]. Randomized studies conducted over 24 weeks showed a significant reduction in joint pain, swelling, and numbness during celecoxib treatment compared to the placebo group. These studies have shown that celecoxib surpasses placebo in terms of the ACR20 index, which is a combination of clinical, laboratory, and functional indicators in rheumatoid arthritis. Celecoxib doses of 100 mg twice a day and 200 mg twice a day were similar in effectiveness and compared to 500 mg twice a day of naproxen. Although 100 mg twice a day or 200 mg twice a day of celecoxib provided the same therapeutic effect, some patients were additionally prescribed 200 mg twice a day of celecoxib (a total of 800 mg). However, prescribing the drug at an increased dose of 400 mg twice a day did not provide any additional benefit to patients during the study [4.8].

The purpose of the study is to evaluate the effectiveness of therapy with selecoxib (seletor) in patients with rheumatoid arthritis. The evaluation of the effectiveness of selecoxib therapy in patients with rheumatoid arthritis.

Materials and methods

The clinical study was conducted from 2023 to 2024 at the departments of rheumatology, cardio-rheumatology, internal disease rehabilitation, and an outpatient course of arthrological specialization of the multidisciplinary clinic of the Tashkent Medical Academy.

Fifty patients with rheumatoid arthritis were included in the study. The study involved patients aged 18 to 55 years. The mean age of the patients was 39.56±5.34. The distribution of patients by age indicator was as follows: patients under the age of 20 and 20-29 years were almost equal, with the highest percentage (38.75%) being those aged 40-55. The distribution of patients by gender: 40 (80%) were women and 10 (20%) were men. The average duration of the disease in patients was 7.5±1.3 years. Morning stiffness was observed in 44 (73.3%) patients, edema in 24 (48%) patients, and deformation in 12 (20%) patients.

Table 1 General characteristics of patients

Index	RA (n=50)
Gender: male, n (%) woman, n (%)	10 (20) 40 (80)
Average age, M±m (years)	39,56±5,34
Duration of disease, M±m (years)	7,5±1,3
Signs, n (%): Morning stiffness Swelling Deformation	 44 (73,3) 24 (48) 12 (20)

The patients under observation were divided into two groups. Twenty-five patients in the first group were prescribed 10 mg of methotrexate as basic anti-inflammatory therapy per week, while 25 patients in the second group were prescribed celecoxib at a dose of 200 mg twice a day in combination with 10 mg of methotrexate per week for basic anti-inflammatory therapy.

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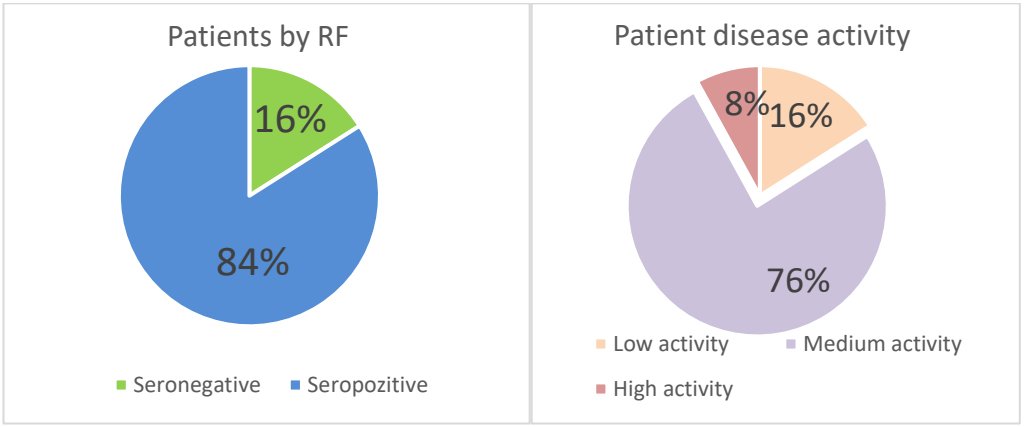
The erythrocyte sedimentation rate (ESR), C-reactive protein, the Disease Activity Score-28 scale (DAS-28), and the visual analog scale (VAS) index were compared in the observed patients.

Results and discussion

The distribution of patients with rheumatoid arthritis depending on the presence of rheumatoid factor (%) was 8 (16%) seronegative patients and 42 (84%) seropositive patients. High activity was observed in 4 (8%) patients, moderate in 38 (76%), and low in 8 (16%) patients.



Analysis of antibodies to cyclic citrulline peptide (CCP) in patients of both groups revealed a positive CCP in 38 patients (76%), and a negative CCP in 12 patients (24%).

Table 1 presents the dynamics of inflamed and painful joints, ESR, C-reactive protein, VAS, DAS-28 scales, and HAQ index before and after treatment in the observed patients.

Table 2 * (P < 0.001) - the difference compared to the indicators before treatment is statistically significant

Indicators	Observation results (Group I)		Observation results (Group II)	
	Before treatment (n=25)	After treatment (n=25) 6 month	Before treatment (n=25)	After treatment (n=25) 6 month
Number of inflammatory joints	10,7±3,1	8,3±2,8	13,8±4,2	6,7±3,2*
Number of painful joints	26,2±10,6	18,5±3,7	30,5±11,6	12,4±2,2*
ESR	38,2±6,8	15,5±6,7	37,6±7,4	11,3±5,7*
C-reactive protein	44,5±3,8	31,1±5,6	41,7±5,3	19,2±5,8*
VAS	71,1±2,1	30,6±1,81	76,7±2,32	28,9±2,13*
DAS-28	4,84±1,7	4,15±1,4	4,89±2,0	3,89±1,2*
Index HAQ	0,96±0,6	0,68±0,06	1,08±0,3	0,56±0,09*

According to Table 1, the reduction in the number of inflamed and painful joints, ESR, C-reactive protein, VAS, DAS-28 scales, and HAQ index in our patients in Group II was significant compared to Group I.

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Conclusion

As a result of the conducted research, it can be concluded that combined therapy with the drug selecoxib can more effectively reduce disease activity in RA patients compared to monotherapy with methotrexate. This improves the physical condition of patients and increases their working capacity.

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