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## INFLUENCE OF ACCEPTING BASIC ANTIRHEUMATIC THERAPY FOR ANKYLOSING SPONDYLOARTHRITIS ON THE CLINICAL COURSE COVID -19

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### ABSTRACT

*The article presents data from our own studies on the clinical course of COVID-19 in patients with ankylosing spondylitis while receiving basic therapy. Patients were divided into groups: those who underwent COVID-19 against the background of basic therapy and without it. The impact of COVID-19 was compared with clinical symptoms, disease activity. According to the results of the studies, a positive effect of basic antirheumatic therapy on the course of coronavirus infection in patients with ankylosing spondylitis was revealed.*

**KEYWORDS:** COVID-19, Ankylosing Spondylitis, Coronavirus Infection.

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### INTRODUCTION

A new coronavirus infection, which gave rise to a pandemic in 2020, spread rapidly, struck the whole world with a high contagiousness of the disease, a variety of mutant strains, a polymorphic clinical picture, as well as damage to various organs and systems [5,6,10]. The disease is characterized not only by damage to the lungs, but also by the involvement of other organs and systems of the body in the pathological process, including the osteoarticular system [1, 7].

Ankylosing spondylitis (AS) is an autoimmune disease closely associated with HLA-B27 that affects the spine, sacroiliac joints, peripheral joints and ultimately leads to ankylosing and disability of patients [3, 4, 8, 9].

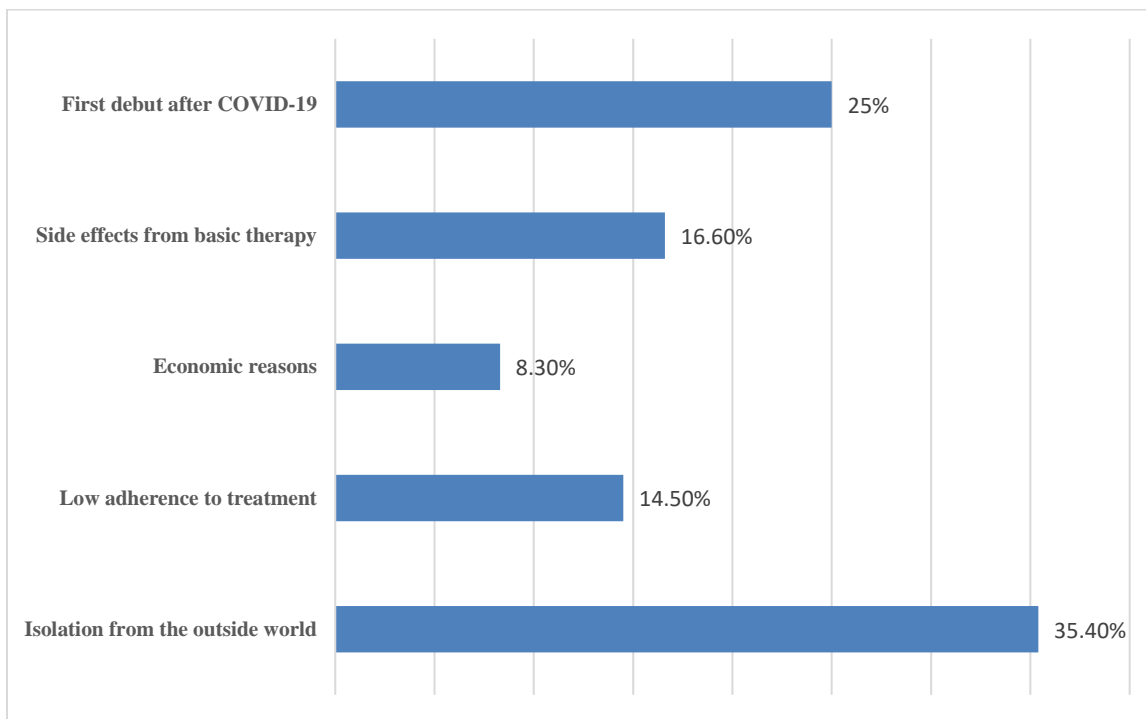
Given the similar immune mechanisms in the pathogenesis of development COVID-19 and AS [11] and studying the effect of taking basic antirheumatic therapy on the clinical picture of coronavirus infection with a combination of both pathologies is of particular interest.

### Materials and methods of research:

In the period from 2020-2022, 211 patients diagnosed with AS were examined in the 3-city clinical hospital of Tashkent and the Multidisciplinary Clinic of the Tashkent Medical Academy, of which there were 174 men, 37 women, the average duration of the disease was  $8.8 \pm 2.4$  years. The control group consisted of 40 healthy volunteers of the appropriate

middle age. The diagnosis was made according to the modified New York criteria for the diagnosis of AS. The patients were initially divided into two groups: group I , 91 patients with AS who had undergone COVID -19, and group II , 120 patients with a history of AS who did not have a past coronavirus infection. The first group, in turn, was divided into two groups: group IA - 48 patients with AS who underwent COVID -19 who did not receive basic therapy, group I Group B - 43 patients who underwent COVID -19 receiving basic therapy and Group II - 120 patients with a history of AS who did not have a past infection with COVID -19. The average age of patients in group I A was  $42.2 \pm 13.3$  years, group I Group B  $41.4 \pm 10.1$  years and Group II  $40.2 \pm 8.3$  years . The axial form occurred in 53.7%, the peripheral form of AS in 46.3% of patients. The vast majority of patients with AS (n = 172; 82.86%) had theHLA - B27.

When analyzing the reasons for the absence of basic therapy in patients of group IA , the following were observed: the patient’s lack of contact with the attending physician and isolation from the outside world during the first wave of Covid-19 - 35.4% ( n = 17), lack of awareness of the need for long-term use of basic drugs therapy - 14.5% (7), economic reasons - 8.3% ( n = 4), the presence of side effects from basic therapy 16.6% ( n = 8) and in 12 patients (25%) after undergoing coronavirus infection in patients, the first debut of AS was observed (Pic. 1).

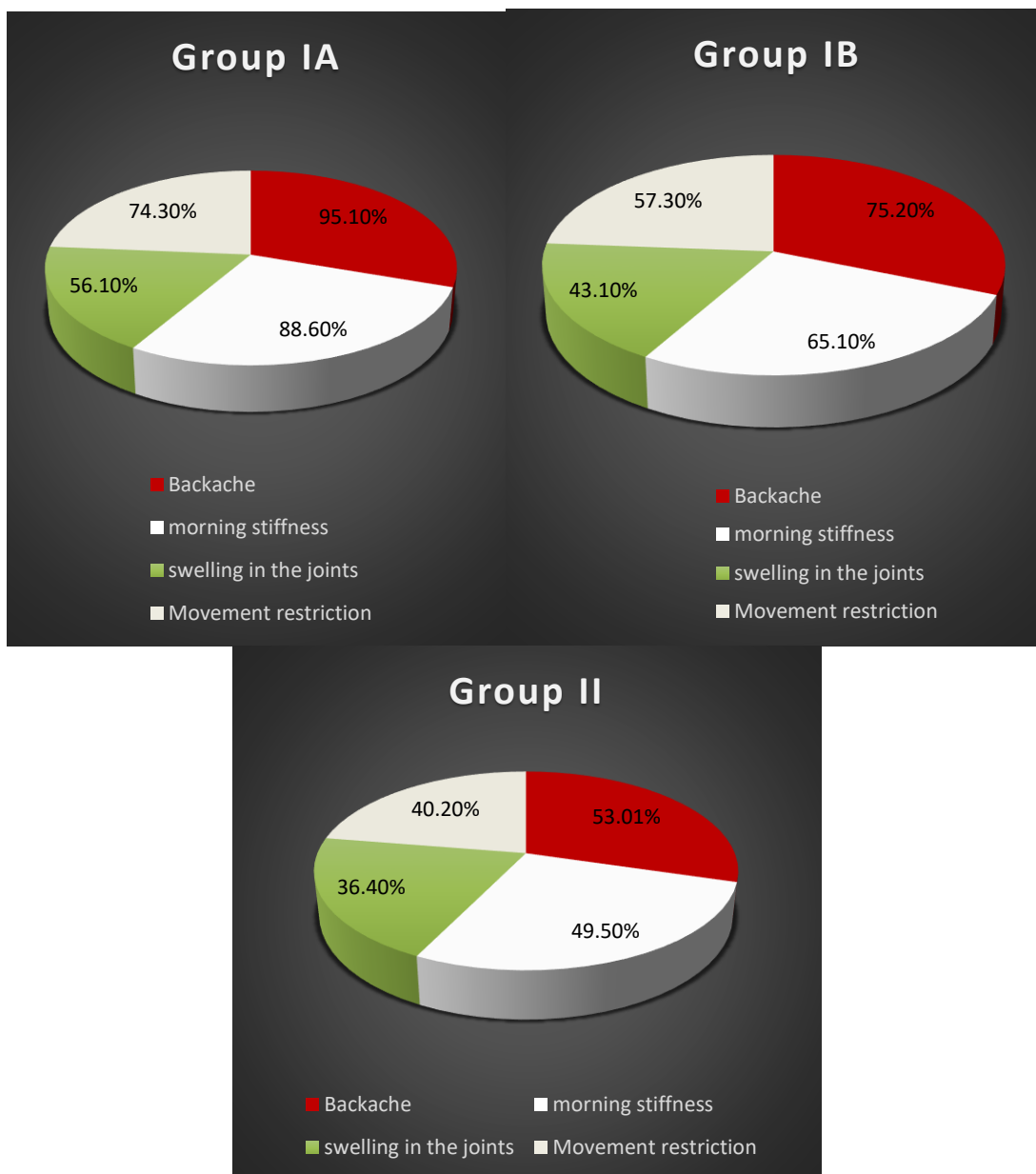


**Pic.1. The main reasons for the lack of basic therapy in patients with AS during the incidence of coronavirus infection.**

Patients from II Group B received the following basic drugs: sulfasalazine - 79.0% (n =34), methotrexate 9.3% (n =4), leflunamide 6.9% (n =3), combination basic therapy 4.6% (n =2).

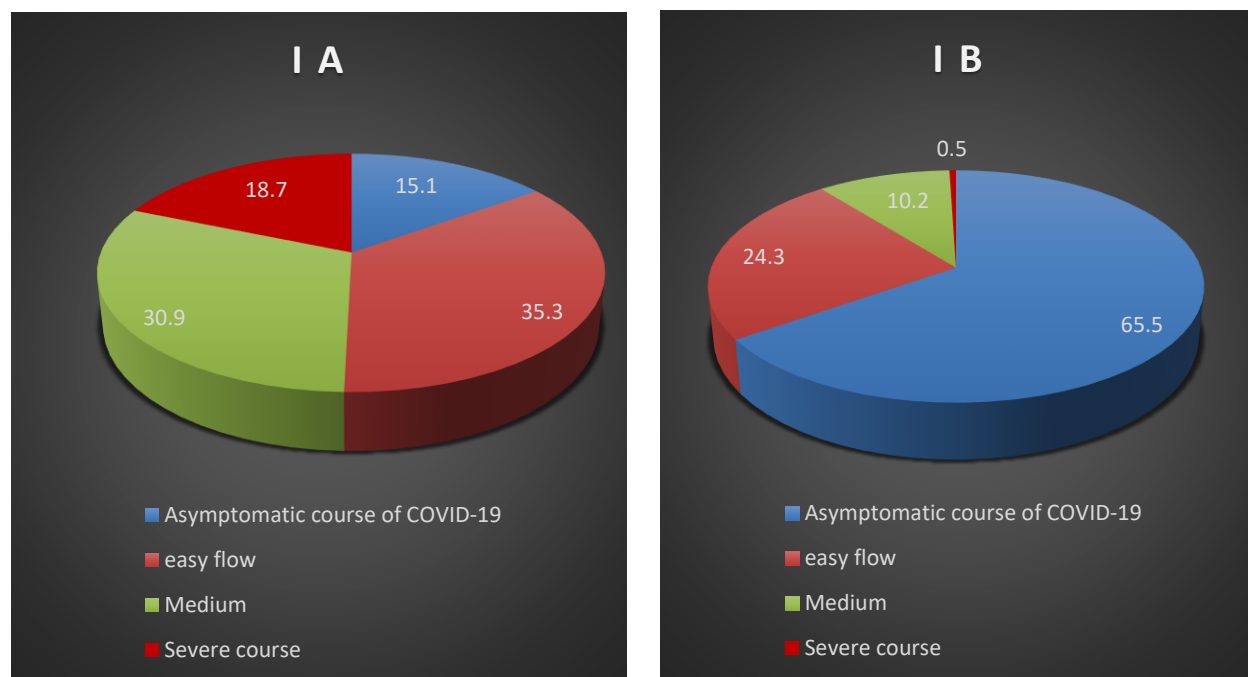
The main complaints of patients in the three groups were such as morning stiffness, which was observed in 88.6% of patients of group I A, in 65.10% of group I and 49.5% of patients of group II ; back pain was observed in 95.1% of patients of group I A, in 75.2% of group I B and 53.01%

of patients of group II ; joint swelling (in patients with a peripheral form of the disease) in 56.1% of patients of group I A, in 43.10% of group I B and 36.4% of patients of group II ; restriction of movements in 74.3% of group I A, in 57.3% of group I B and in 40.2% of group II (Pic. 2).



**Pic. 2 The main complaints of patients in the study groups.**

When studying the course of COVID -19 in groups IA and IB , differences were revealed: in patients who were on basic therapy (group IB ), there was no severe course of coronavirus infection, and asymptomatic forms prevailed (65.5%); in patients who did not receive treatment for AS (group IA ), an asymptomatic course was observed in a small percentage (15.1%), mild and moderate course were equally encountered, and a severe course occurred in 18.7% of patients (Pic. 2).



**Pic.3. The course of COVID-19 in patients with AS**

Very often the presence of IgG antibodies COVID -19 in the blood of AS group I patients B was an incidental finding due to the asymptomatic course of coronavirus infection. At the same time, the presence of antibodies due to vaccination was excluded, since not one patient from the study groups received the COVID -19 vaccine, due to a relative contraindication to it. Most patients IA groups contacted us after the end of the period of the second and third waves of COVID -19.

**TABLE 1 THE MAIN CLINICAL MANIFESTATIONS OF COVID -19 IN AS:**

Options	I A group	I B group
Fever	75.5%	28.1%
Intoxication syndrome	49.6%	30.0%
loss of taste	59.3%	27.7%
Loss of smell	64.6%	32.2%
Lung injury	39.4%	13.2%
Astheno-depressive syndrome	67.4%	22.1%

The main clinical manifestations of COVID -19 in patients with AS were the presence of fever (75.1% and 28.1%), arthralgia (49.6% and 30.0%), loss of taste (59.3% and 27.7%) , loss of smell (64.6% and 32.2%), lung damage (39.4% and 13.2%), astheno-depressive syndrome (67.4% and 22.1%), respectively, in groups IA and IB (Tab.1).

**DISCUSSION:**

Severe acute respiratory syndrome coronavirus 2 (SARS- CoV - 2) causes cytokine-mediated inflammation leading to multiple clinical manifestations in COVID -19 [1, 2, 5]. During the beginning of the pandemic, the rheumatological service was asked questions about the impact of basic antirheumatic therapy on the course of COVID -19, since these drugs have immunosuppressive properties.

Our work presents data on the clinical picture of COVID -19 in patients with AS. The most interesting fact in our work is that there was no severe course of COVID-19 while receiving basic therapy. Basic antirheumatic therapy suppresses the hyperproduction of pro-inflammatory cytokines, which play a role not only in the pathogenesis of AS, but also in severe COVID-19 [1,11]. If we compare the clinical and functional characteristics of the groups, we found a more pronounced limitation of functional activity, a higher activity of spondylarthritis on several scales at once, and a pronounced intensity of the pain syndrome in patients who did not receive basic AS therapy. Refusal to take basic antirheumatic drugs in many AS patients due to fear of a severe course of COVID -19 contributed to the progression of the underlying disease.

## CONCLUSIONS:

1. Acceptance of basic antirheumatic therapy for ankylosing spondylitis helps to reduce the severe course of COVID -19.
2. It is not recommended to refuse to take basic antirheumatic drugs in case of COVID -19 disease in order to avoid an increase in the activity of ankylosing spondylitis.

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