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THE COVID-19 PANDEMIC PROMPTS ISOLATION AND BEHAVIORAL CHANGES IN PATIENTS WITH CHRONIC RHEUMATIC DISEASES LEADING TO REDUCED PHYSICAL ACTIVITY, INCREASED PAIN, DISEASE ACTIVITY, AND LOW SEROPREVALENCE OF SARS-COV2 ANTIBODIES

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Background: The coronavirus disease 2019 (COVID-19) pandemic has complicated the management of chronic rheumatic diseases (CRD). Patients with CRDs are immunocompromised and generally prone to infection. The fear of COVID-19 and the degree of the self-imposed shielding strategy implemented by many patients introduced new challenges for the patients. Although recommendations have been developed to manage patients with CRDs by, i.e., EULAR, strong evidence is still lacking to guide treatment decisions.

Objectives: This study aimed to assess the seroprevalence of SARS-CoV-2 antibodies in patients with CRDs and healthy controls during the first wave of the pandemic. We further evaluated the effect of the pandemic on patient behavior regarding medication, exercise, pain, and experienced disease activity. Finally, we investigated the self-perceived consequences of the pandemic and lock-down on anxiety and depression in patients with CRDs compared with healthy controls.

Methods: More than 900 participants were included in the study: 405 patients with rheumatoid arthritis or systemic lupus erythematosus and 513 blood donors. All participants had SARS-CoV-2 antibodies measured (Wantai SARS-CoV-2 total antibody ELISA; sensitivity 96.7%, specificity 99.5%) and answered a questionnaire concerning behavior, anxiety, and symptoms of depression (PHQ-9). The participants with CRD were further asked about physical activity, adherence to medication, and disease-related symptoms.

Results: CRD patients had a sixfold lower seroprevalence of SARS-CoV-2 antibodies compared to controls ($p=0.03$) (Figure 1). Almost 60% of patients were unable to exercise as usual, leading to increased pain in 34%, and experience of increased disease activity in 27%. Approximately 10% of patients reduced or discontinued their immunosuppressive treatments at their own initiative. Symptoms of moderate depression were present in 19% of patients compared to 6.8% of controls ($p<0.001$).

Figure 1. Presence of SARS-CoV-2 antibodies in chronic rheumatic disease patients (1/365, 0.3%) and controls (blood donors (10/513, 1.9%), (* $p=0.03$).

Conclusion: Low seroprevalence in patients with CRDs indicates successful mitigation of exposure to SARS-CoV-2. However, this appears to occur at the expense of physical activity and adherence to immunosuppressive treatment. Our results raise an important concern regarding the consequences of isolation for patients with CRDs. The result of physical isolation is a risk of severe mental health issues, physical inactivity, self-medication, increased pain, and increased disease activity. The long-term consequences of recommendations for patients with CRDs should be taken into account when tackling the continuing pandemic.

Table 1.

Patient characteristics	CRD cohort	Blood donors	
Patients included, n	405 (206 SLE, 199 RA)	513	
Disease duration, years (IQR)	12.9 (7.0-23.0)		
Age, years (IQR)	56.9 (43.6-66.9)	47 (33-57)	
BMI, kg/m ² (IQR)	25.0 (22.1-28.6)	25.5 (23.1-28.4)	
Charlson Comorbidity Index, score (IQR)	2 (1-4)		
Behavioral and mental changes due to the risk of COVID-19	CRD cohort	Blood donors	p-value
Washes hands more often (%)	91.6	91.4	0.92
Coughing or sneezing in the elbow (%)	83.0	84.0	0.67
Wearing face mask (%)	5.0	2.4	0.001
Restricts the use of public transport (%)	47.4	32.9	<0.001
Avoid places where many people are gathered (%)	80.7	70.0	<0.001
Stay at home (%)	51.6	35.3	<0.001
Symptoms of moderate depression, PHQ-9 >=10, (%)	19.01	6.75	<0.001
Pandemic effect on training, pain and disease activity	CRD cohort		
Have you been able to exercise as usual, yes (%)	41.4		
Have you been less physically active due to COVID-19, yes (%)	44.7		
Has the degree of physical activity increased the pain from your rheumatological disease? yes(%)	33.9		
Have you experienced increased disease activity during COVID-19? yes(%)	26.9		

Interquartile range (IQR), Patient Health Questionnaire-9 (PHQ-9),

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COVID-19 ACROSS RHEUMATOLOGY: A BIBLIOMETRIC STUDY

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Background: The Coronavirus disease 2019 (COVID-19) outbreak spread rapidly among the whole world, becoming the greatest pandemic for the decades. It triggered the enormous challenges for the global health system, forcing doctors and patients to adapt to new realities and the field of rheumatology was not an exclusion.

Objectives: The aim of this study was to analyze articles covering interconnection between COVID-19 and rheumatic diseases; to investigate the common features of papers in this category and indicate the most influential among them; to determine which rheumatic nosologies were most represented.

Methods: For retrieving of literature data, we applied the bibliometric database Scopus and conducted our search on 12th of January using following keywords: "rheumatoid arthritis" OR "systemic lupus erythematosus" OR "systemic sclerosis" OR "vasculitis" OR "myositis" OR "rheumatology" AND "COVID-19". All selected articles were analyzed according to various aspects: type of document, authorship, journal, citations score, rheumatology field, country of origin, language, and keywords. We have built the visualizing keywords network (Figure 1) with the help of software tool VOSviewer version 1.6.15 (the minimum keyword occurrence threshold was set at 5).