Conclusion: Chronic HCQ use did not prevent COVID-19 in RD compared to their household cohabitants. Health care profession, presence of comorbidities LES, SSc and rituximab were identified as main risk factors for COVID-19 and aging and heart disease as higher risk for hospitalization. Our data suggest these outcomes could be considered to manage them in clinical practice.

Table 1. Frequency and severity of COVID-19 in patients with rheumatic diseases on chronic use of hydroxychloroquine compared to their household controls

COVID-19 outcomes		Total (%)	Groups		P
			Patients (%)	Controls (%)	
Diagnosis	No	9256 (89.1)	5300 (88.3)	3956 (90.2)	0.002
	Yes	1132 (10.9)	704 (11.7)	428 (9.8)	
Severity	Mild	1059 (93.6)	662 (94.0)	397 (92.8)	0.391
	Moderate	52 (4.6)	32 (4.5)	20 (4.7)	
	Severe	21 (1.9)	10 (1.4)	11 (2.6)	

HCQ: hydroxychloroquine. Moderate and severe COVID-19 included the need for any of the following: hospitalization, intensive care, mechanical ventilation or death.

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POS1253

MORTALITY RATE RELATED TO COVID - 19 IN RHEUMATIC AND MUSCULOSKELETAL DISEASES (RMDs)

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Background: Spain has been one of the countries most impacted by the COVID-19 pandemic. Among Spanish patients, 56,799 deaths have been reported. Although we have been in this situation of pandemic for a year, studies that show risk mortality rates in patients with rheumatic diseases continue to be scarce.

Objectives: In patients with rheumatic and musculoskeletal diseases (RMDs) and infected with Covid - 19, a) we want to assess the mortality rate (MR) related to COVID-19; and b) to analyze the role of RMDs in mortality risk.

Methods: An observational longitudinal study was conducted during the epidemic peak in Madrid (1st Mar to 20th May 2020). All patients attended at the rheumatology outpatient clinic of a tertiary hospital with a diagnosis of RMDs and SARS - CoV 2 infection were included (according to a medical diagnosis or confirmed with a positive SARS-CoV-2 PCR diagnostic test). All patients were included since the time of COVID-19 diagnosis. Main outcome: death related to COVID-19 infection. Independent variable: type of RMDs including: autoimmune (systemic autoimmune conditions (SAC) and inflammatory joint disease (IJD)) and non-autoimmune (mechanical diseases and inflammatory diseases (microcrystalline arthritis and tendonitis)). Covariates: sociodemographic, comorbidities, chronic use of corticoids prior to COVID-19 infection. Survival techniques were used to estimate the MR related to COVID-19, given per 1,000 persons-month with a 95% confidence interval [CI]. The time of observation comprised the elapsed time between the date of COVID-19 diagnosis of infection until the date of patient's death, or end of study. Cox multiple regression analysis was run to examine the effect of autoimmune RMDs compared to non-autoimmune RMDs on mortality risk adjusted by sex, age and comorbidities. Results were expressed by Hazard Ratio (HR) and [CI].

Results: 406 patients were included with RMD and Covid - 19 infection with a total follow-up 642.5 patients-month. 69.21% were women with a mean age at diagnosis of 60 ± 15.26 years. The evolution time from the diagnosis of rheumatic disease was 8 ± 8.38 years. 26% had comorbidity at baseline. 25% were chronically on corticoids prior to the infection. Of the 406 patients, 244 (60.09%)

had non-autoimmune RMD (157 mechanic, 87 inflammatory) and 162 (39.9%) (106 (65.43%) IJD, 56 (34.56%) systemic condition) had autoimmune RMD. Of the 406 patients, 45 (11%) died during the follow-up, being 12 ± 14 days the mean time from infection to death (P50: 6[2-12] and a maximum of 60 days). MR was estimated in 70.03 [52.28-93.79] per 1,000 persons-month. MR was higher for men (MR 105[68-163]) than for women (MR 55 [37.2-81.6]) and in older people (MR <60: 4.4, [0.6-31.7]; MR 60-75 years: 38.7[17.3-86.2]; MR >75Years: 486 [354-1668]). The HR of mortality in autoimmune RMDs compared to non-autoimmune RMDs did not achieved statistical significance (HR: 1.39 [0.77-2.5], p=0.27). After adjusting for confounders, we did not find higher risk of mortality among the different types of RMDs (HR autoimmune vs non-autoimmunes: HR: 1.12 [0.6-2.02], p=0.7; HR IJD vs SAC: 1.5 [0.6-3.6], p=0.34; HR non-autoimmune vs SAC: 1.1 [0.5-2.5], P=0.7). Age (HR: 1.12; [1.10-1.15], p<0.001), and the presence of comorbidities (HR: 2.05; [1.08-3.89], p=0.027) increased the Mortality risk.

Conclusion: In patients with RMD and COVID-19 infection, we found a mortality rate of 7 per 100 persons-month. This study shows that the mortality risk related to COVID-19 is similar between autoimmune and non-autoimmune diseases after adjusting by confounders. We also found that age and comorbidities are risk factors for mortality related to COVID-19 infection.

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POS1254

INCIDENCE AND OUTCOME OF COVID-19 IN ROUTINE RHEUMATOLOGY CARE: DATA FROM A SINGLE OUTPATIENT CENTER IN GERMANY

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Background: Coronavirus SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) and its associated disease COVID-19 (Corona Virus Disease 2019) has become a worldwide pandemic since its first cases in December 2019 in Wuhan Province in China. Until now little is known about the incidence and the course of the disease in a routine setting of rheumatology outpatient care.

Objectives: Aim of the study was to identify cases with COVID-19, to analyse course and outcome of the disease and the potential role of antirheumatic medication.

Methods: On the occasion of a routine follow-up examination all consecutive patients of our rheumatology outpatient center were questioned about the history of established COVID-19, about typical symptoms or about contacts with patients in the period from March to the end of December 2020. Diagnostic work-up (results of PCR or antibody testing, imaging) was documented. Antibody ELISA-tests (IgG, IgA, IgM, Euroimmun) were performed in patients reporting typical signs and symptoms. Course and outcome of COVID-19 were divided in 5 groups (mild, moderate, severe, most severe, and lethal).

Results: About 2.000 patients were screened. Positive findings for SARS-CoV-2 confirmed by PCR or serological testing were detected in n=33/2000 (1.65%) patients (n=14/33 (43%) rheumatoid arthritis (RA), n=8/33 (24%) psoriatic arthritis (PsA), n=7/33 (21%) spondyloarthritis (SpA), n=4/33 (12%) other diseases).

No patient died and no patient required intensive care or invasive mechanical ventilation. N=2/33 patients (6%) suffered a severe course with hospitalization, one of these required intermittent oxygen administration. Both patients had no ongoing therapy with disease modifying antirheumatic drugs (DMARDs). One patient suffered from SpA, one patient from RA. Both patients had relevant comorbidities with chronic lung disease and breast cancer.

Symptoms were absent or mild in n=21/33 (64%) patients, moderate in n=10/33 (30%). N=22/31 (71%) of patients with absent, mild or moderate symptoms were treated at least with one DMARD.

Conclusion: For an at-risk population, the incidence of COVID-19 was unexpectedly low. Overall, patients had a mild course despite immunosuppressive therapy. This finding is consistent with published data from a single university

center (1) and other university outpatient clinics (2). Possibly DMARD-therapy may protect against the occurrence of cytokine storm and vasculitic complications, which lead to severe courses and lethal outcomes in some of the patients. The data support the recommendation not to discontinue DMARDs for fear of COVID-19.

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POS1255

REACTOGENICITY OF SARS-COV-2 VACCINES IN PATIENTS WITH AUTOIMMUNE AND INFLAMMATORY DISEASE

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Background: Patients with autoimmune disease often require immunosuppressive medications that may increase their risk of developing severe illness from COVID-19. The importance of immunization in this population is particularly high. While the studied vaccines show efficacy in the general population, nothing is known regarding the immune response or safety profile in patients with autoimmune disease and those taking immunomodulatory medications.

Objectives: To assess the safety profile and degree of adverse events from SARS-CoV-2 vaccines in patients with autoimmune and inflammatory disease.

Methods: This study is part of a larger prospective observational study examining the immunogenicity and safety profile of the SARS-CoV-2 vaccine in patients

with immune-mediated diseases taking immunomodulatory medications. Adults with an immune-mediated disease scheduled to receive either a Pfizer or Moderna SARS-CoV-2 vaccine were enrolled in this study. Subjects participated in 3 study visits (pre-vaccine, dose 1 (D1) and dose 2 (D2)) where blood, for immunologic assays, and clinical data were collected. Assessments of adverse events (AE), including local and systemic symptoms and validated degree of AE severity were solicited within 7 days of receiving each vaccine dose.

Results: To date, 70 patients with autoimmune and inflammatory disease have been enrolled. Demographic and clinical characteristics are shown in Table 1. Distribution of current immunomodulatory medications included prednisone 18.6%, conventional synthetic DMARD 55.7%, targeted synthetic DMARD 4.3%, and biologic DMARD 68.5%. Almost all participants experienced an adverse event following vaccination (D1 96%, D2 100%). Following D1 AEs were generally mild (76.5%) whereas following D2 a large portion of patients experienced AEs that were moderate (47.8%) and severe (30.5%). Injection site pain was the most common AE following both doses followed by arthralgias (D1 21.6%, D2 78.2%), fever (D1 21.6%, D2 70%) and fatigue (D1 21.6%, D2 65.2%) (Figure 1).

Figure 1. Solicited Local and Systemic Adverse Events. Percentage of participants who had endorsed an adverse event within 7 days of first or second dose of SARS-CoV-2 Vaccine. 'Other' symptoms included chills, blurry vision, brain fog and dizziness.

Conclusion: Patients with autoimmune and inflammatory disease experience a significant burden of adverse events following SARS-CoV-2 vaccination with both frequency and severity appearing greater than that of the reported results from the vaccine clinical trials. Several of the endorsed AEs such as fever, fatigue and arthralgias can also be commonly seen in rheumatologic diseases, mimicking flares. While SARS-CoV-2 immunization is crucial in patients with autoimmune diseases, this study demonstrates the importance of understanding the AEs experienced by this patient population to better inform patients of possible expected side effects of SARS-CoV-2 vaccination and further management in the future.

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POS1256

SINGLE DOSE TOCILIZUMAB PHARMACOKINETICS IN GLUCOCORTICOID PRE-TREATED COVID-19 PATIENTS DURING CYTOKINE STORM SYNDROME HYPERINFLAMMATORY EPISODE: LESS IS MORE

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Table 1. Demographic and Clinical Characteristics of Participants

Parameter N (%)	N=70
Age [years], mean (SD)	48.3 ± 16.4
Age group	
< 65	53 (75.7)
65+	17 (24.3)
Gender	
Female	48 (68.6)
Male	20 (28.6)
Other	2 (2.9)
Race	
White	47 (67.1)
Asian	14 (20.0)
Hispanic	8 (11.4)
Black	1 (1.4)
BMI [kg/m ²], mean (SD)	25.0 ± 5.4
Immunologic Diagnosis	
Rheumatoid Arthritis	21 (30.0)
Spondyloarthritis*	21 (30.0)
Systemic Lupus Erythematosus	8 (11.4)
Connective Tissue Disease, Other†	12 (17.1)
Vasculitis	3 (4.2)
Inflammatory Bowel Disease	7 (10.0)
Autoinflammatory Syndrome	5 (7.1)
Multiple Sclerosis	2 (2.9)
IgG4 Related Disease	2 (2.9)
Disease Duration [years], mean (SD)	9.0 ± 5
Medications	
Prednisone	13 (18.6)
DMARDs	
Hydroxychloroquine	16 (22.9)
Methotrexate	15 (21.4)
Sulfasalazine	6 (8.6)
Tofacitinib	3 (4.3)
Azathioprine	2 (2.9)
Biologics	
TNF inhibitor	33 (47.1)
Rituximab	7 (10)
Abatacept	6 (8.6)
IL-23 inhibitor	2 (2.9)

* Spondyloarthritis includes Axial Spondyloarthritis and Psoriatic Arthritis. † Other Connective Tissue Disease includes scleroderma, Sjogren's syndrome, polymyositis, and UCTD.