Objectives: In patients with rheumatic and musculoskeletal diseases (RMDs) and infected with Covid – 19, we aim to investigate the role of systemic autoimmune conditions compared to other type of RMDs in severity of COVID-19 in terms of hospital admissions.

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 Covid-19 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 variable: hospital admission related to Covid -19 infection. Independent variable: type of RMD including: autoimmune (systemic autoimmune conditions and inflammatory joint disease (IJD)) and non-autoimmune (mechanical diseases, and inflammatory diseases (microcrystalline arthritis and tendonitis)). Covariates: sociodemographic, clinical and therapy used. Statistical analysis: description of the sociodemographic, clinical and treatment characteristics of the patients. A multivariate logistic regression adjusted by age, sex and comorbidities was used to evaluate the risk of the different types of RMDs in hospital admissions related to Covid-19. The results were expressed as OR with its corresponding confidence interval (95% CI).

Results: 406 patients were included with RMDs and Covid- 19 infection. 69.21% were women with a mean age at diagnosis of 60 ± 15.26 years. The evolution time from the diagnosis of RMD 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 autoimmune condition) had autoimmune RMD. 36% of all patients were admitted (31% from not autoimmune RMDs and 43% from autoimmune RMD ($p = 0.013$). The risk of hospital admission in autoimmune RMD compared to non-autoimmune RMD was higher (OR: 1.68; [1.11-2.54], $p=0.013$), being the risk of systemic autoimmune condition compared to both IJD and non-autoimmune RMD higher (OR IJD: 0.41 [0.21-0.51], $p=0.01$; OR non-autoimmune: 0.33; [0.18-0.61]; $p=0.000$). After adjusting by confounders, autoimmune RMD had higher risk of hospital admissions compared to the rest (OR: 1.75; [1.04-2.95]; $p=0.03$), and specifically systemic autoimmune condition had higher risk compared to IJD (OR of IJD 0.33; [0.14-.076]; $p=0.009$) and compared to non-autoimmune (OR non autoimmune 0.28; [0.13-0.59], $p=0.001$). Advanced age (OR: 1.10; [1.07-1.12], $p<0.001$), male (OR 0.58; [0.33-1.02], $p=0.06$), and more number of comorbidities (OR 1.39; [1.02-1.90] $p=0.03$) also increased the risk of hospitalization related to COVID-19.

Conclusion: One third of the RMD patients infected with COVID-19 required hospital admission. This study shows that patients with autoimmune and specifically with systemic autoimmune conditions have a higher risk of hospitalization related to COVID-19. We also show that advanced age, male sex and a higher number of comorbidities can contribute to worsen the prognosis of the COVID-19 disease.

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POS1252

COVID-19 IN PATIENTS WITH RHEUMATIC DISEASES ON CHRONIC USE OF HYDROXYCHLOROQUINE IN A LARGE BRAZILIAN COHORT – A 24-WEEK PROSPECTIVE STUDY

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Background: The role of chronic use of hydroxychloroquine (HCQ) in rheumatic disease (RD) patients during the SARS-CoV-2 pandemic is still subject of discussion.

Objectives: To compare the occurrence of COVID-19 and its outcomes between RD patients on HCQ use with individuals from the same household not taking the drug during community viral transmission in an observational prospective multicenter study in Brazil.

Methods: Participants were enrolled and monitored through 24-week (From March 29th to Sep 30th, 2020) regularly scheduled phone calls performed by trained medical professionals. Epidemiological and demographic data, as well as RD disease activity status and current treatment data, specific information about COVID-19, hospitalization, need for intensive care, and death was recorded in both groups and stored in the Research Electronic Data Capture (REDCap) database. COVID-19 was defined according to the Brazilian Ministry of Health (BMH) criteria. The statistical analysis was performed using IBM-SPSS v.20.0 software. Group comparisons were made using the Man-Whitney, Chi-Square and Fisher Exact Test, as well as multivariate regression models adjusted to confounders. Survival curves were performed using Kaplan-Meier analysis.

Results: A total of 10,427 participants mean age (SD) of 44.04 (14.98) years were enrolled, including 6004 (57.6%) rheumatic disease patients, of whom 70.8% had systemic lupus erythematosus (SLE), 6.7% rheumatoid arthritis (RA), 4% primary Sjögren's syndrome (pSS), 1.8% mixed connective tissue disease (DMTC), 1% systemic sclerosis (SSc) and others (15.9), including overlap syndromes. In total, 1,132 (10.8%) participants fulfilled criteria for COVID-19, being 6.7% RD patients and 4.1% controls ($p=0.002$). A recent influenza vaccination had a protective role ($p<0.001$). Moderate and severe COVID-19 included the need for hospitalization, intensive care, mechanical ventilation or death. Infection severity was not different between groups ($p=0.391$) (Table 1). After adjustments for multiple confounders, the main risk factors significantly associated with COVID-19 were higher education level (OR=1.29 95%CI 1.05-1.59), being healthcare professionals (OR=1.91; 95%CI 1.45-2.53), presence of two comorbidities (OR=1.31; 95%CI 1.01-1.66) and three or more comorbidities associated (OR=1.69; 95%CI 1.23-2.32). Interestingly, age ≥ 65 years (OR=0.20; 95%CI 0.11-0.34) was negatively associated. Regarding RD, the risk factors associated with COVID-19 diagnoses were SLE (OR= 2.37; 95%CI 1.92-293), SSc (OR=2.25; 95%CI 1.05-4.83) and rituximab use (OR=1.92; 95%CI 1.13-3.26). In addition, age ≥ 65 years (OR=5.47; 95%CI 1.7-19.4) and heart disease (OR=2.60; 95%CI 1.06-6.38) were associated with hospitalization. Seven female RD patients died, six with SLE and one with pSS, and the presence of two or more comorbidities were associated with higher mortality rate.

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