#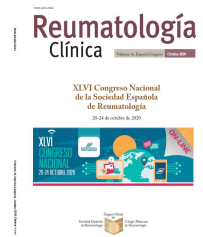# COVID01 - Clinical features and outcomes of COVID-19 in patients with rheumatic and musculoskeletal diseases: Results from COVIDSER study

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Resumen

Introduction: Studying patients with immune-mediated rheumatic and muculoskeletal diseases (RMDs), such as Rheumatoid Arthritis (RA), Spondyloarthropathies (SpA), Systemic Lupus Erythematosus (SLE), among others, could be useful to understand the evolution and prognosis of the infection, and to inform therapeutic decision making in daily clinical practice.

Objectives: To describe the clinical characteristics and outcomes of patients with CoVid-19 on targeted therapies in COVIDSER.

Methods: COVIDSER is a retrospective observational registry promoted by the Spanish Society of Rheumatology aimed at assessing impact of CoVid-19 in patients with RMDs. Subjects were recruited from Biobadaser (Spanish Registry for Adverse Events of Biological Therapy in Rheumatic Diseases), Relesser (SLE registry) and Carma (CARdiovascular in rheuMAtology). A total of 5,767 patients were included in this analysis.

Results: We have identified 183 patients with RMDs diagnosed of CoVid-19 at 37 hospitals. Overall, 129 (70.5%) patients were female and 54 (29.5%) male, with a mean age of 56.4 years. Sixty-eight patients (51.2%) had RA. They had long-standing (10.8 years) refractory (2.8 previous bDMARD/tsDMARDs) diseases with 4.6 years of bDMARD/tsDMARD therapy duration. 40 patients were not treated with bDMARD/tsDMARD. Seventy-six (53.2%) were using TNF inhibitors, sixteen (11.2%) Anti-IL17A and 12 JAK inhibitors (8.4%, 4.2% baricitinib and 4.2% tofacitinib). Twenty-two (12.0%) patients were using hydroxychloroquine. Eighty-five patients were diagnosed because positive PCR test (76 patients) or serological test (9 patients), and 98 patients because a compatible clinical picture and close contact with confirmed positive cases. Table 1 shows patients' characteristics. Ten patients died by CoVid-19 (5.9%): two were RA patients, one SpA patient and 7 suffered from other rheumatic diseases. Mean age at CoVid-19 onset were 68.1 (18.7) years-old, two patients treated with Anti-CD20 monoclonal antibodies, two with Anti RANKL and one with Anti-IL6 monoclonal antibodies, 5 did not receive bDMARD and none of them were treated with TNF

inhibitors. With regards to comorbidities, these patients presented a mean BMI 23.3 (4.9), 5 had hypertension and 3 (30%) were smokers or past smokers. Hospitalization was required in 64 patients (37.7%) and intensive care unit admission in 9 (5.3%). There were 13 patients not yet recovered. A total of 165 patients (90.2%) patients are fully recovered at the moment of this analysis.

Clinical features and treatments in rheumatic patients on targeted therapies with the diagnosis of CoVid-19.

Variable	RA	SpA	Other rheumatic diseases	Total
N	68	59	56	183
Age at CoVid-19 onset, years (SD)	59.7 (13.4)	55.8 (11.6)	53.2 (15.6)	56.4 (13.8)
Sex, female, n (%)	56 (82.4)	23 (39.0)	50 (89.3)	129 (70.5)
Disease duration (time since rheumatic diagnosis to CoVid-19), years (SD)	10.0 (6.4)	9.0 (8.2)	13.2 (8.4)	10.8 (7.8)
Time with bDMARDs/tsDMARDs (time since beginning of treatment to CoVid-19), years (SD)	5.0 (5.2)	4.2 (5.9)	4.6 (5.2)	4.6 (5.5)
Comorbidities and risk factors				
Charlson index, mean (SD)	2.5 (1.7)	2.0 (1.4)	2.4 (2.1)	2.3 (1.7)
BMI, mean (SD)	27.9 (5.3)	34.7 (32.1)	25.6 (5.6)	29.7 (19.2)
Hypertension, n (%)	20 (29.9)	26 (44.1)	24 (42.9)	70 (38.5)
Smoking status, n (%)				
Never smoker	35 (53.0)	34 (57.6)	36 (64.3)	105 (58.0)
Current smoker	9 (13.6)	6 (10.2)	10 (17.9)	25 (13.8)
Former smoker	22 (33.3)	19 (32.2)	10 (17.9)	51 (28.2)
CoVid-19 diagnosis, evolution and outcome				
CoVid-19 diagnosis, n (%)				
Confirmed cases (positive PCR or serological test)	34 (50.0)	24 (40.7)	27 (48.2)	85 (46.5)
Suspicious cases (highly compatible clinical picture)	34 (50.0)	35 (59.3)	29 (51.8)	98 (53.6)
CoVid-19 outcome				
Recovered without sequelae	62 (91.2)	57 (96.6)	46 (82.1)	165 (90.2)
Recovered with sequelae	4 (5.9)	1 (1.7)	3 (5.4)	8 (4.4)
Death	2 (2.9)	1 (1.7)	7 (12.5)	10 (5.4)
Hospitalization, n (%)	27 (45.0)	19 (33.3)	18 (34.0)	64 (37.7)
Intensive Care Unit, n (%)	5 (8.3)	1 (1.8)	3 (5.7)	9 (5.3)
Rheumatic disease: treatment and clinical features				
Last DAS-28 available (previous to CoVid-19), mean (SD)	4.5 (1.4)	3.5 (1.2)	3.5 (1.9)	4.0 (1.5)
bDMARD/tsDMARDs previous to CoVid-19), n (%)				
TNF inhibitors	27 (45.0)	36 (67.9)	13 (43.3)	76 (53.2)
Anti-IL6 monoclonal antibodies	8 (13.3)	0 (0.0)	3 (10.0)	10 (7.0)
Anti-CD20 monoclonal antibodies	5 (8.3)	0 (0.0)	5 (16.7)	11 (7.6)
Anti-IL1 monoclonal antibodies	1 (1.7)	0 (0.0)	0 (0.0)	1 (0.7)
Anti-IL17A monoclonal antibodies	0 (0.0)	15 (28.3)	1 (3.3)	16 (11.2)

Abatacept	7 (11.7)	0 (0.0)	1 (3.3)	8 (5.5)
Anti PDE4	0 (0.0)	2 (3.8)	0 (0.0)	2 (1.4)
Anti RANKL	0 (0.0)	0 (0.0)	7 (23.3)	7 (4.9)
JAK inhibitors	12 (20.0)	0 (0.0)	0 (0.0)	12 (8.4)
Baricitinib	6 (10.0)	0 (0.0	0 (0.0	6 (4.2)
Tofacitinib	6 (10.0)	0 (0.0	0 (0.0	6 (4.2)
Number of previous bDMARD/tsDMARDs, mean (SD)	3.4 (2.5)	2.3 (1.5)	2.0 (1.7)	2.8 (2.1)
Use of concomitant csDMARDS				
Methotrexate	24 (35.3)	9 (15.3)	4 (7.1)	37 (20.2)
Hydroxychloroquine	6 (8.8)	0 (0.0)	16 (28.6)	22 (12.0)
Others	10 (14.7)	8 (13.6)	9 (16.1)	27 (14.8)
Monotherapy	31 (45.6)	43 (72.9)	31 (55.4)	105 (57.4)
Use of glucocorticoids, n (%)	32 (53.3)	9 (16.1)	26 (50.0)	67 (39.9)
Dose of glucocorticoids (before CoVid-19), mg, mean (SD)	5.9 (2.9)	5.6 (2.0)	5.3 (2.5)	5.6 (2.7)
Concomitant use of NSAIDs, n (%)	17 (25.0)	20 (33.9)	6 (10.7)	43 (23.5)

Conclusions: These findings demonstrate that the majority of patients with rheumatic diseases included in our registry recover from CoVid-19. Our findings point in the direction that CoVid-19 course and mortality in patients with RMDs treated with b/tsDMARD do not differ from general population (4.8% mortality rate by CoVid-19 in Spain according to data from https://covid19.who.int/). The present data could contribute to clarify the risks of patients with rheumatic diseases and their immunosuppressive medications.