COVID-19 clinical spectrum in psoriatic arthritis patients on biologics and tsDMARDs: results from a cohort at an Italian epicentre of the pandemic's third wave

Sirs,

As the coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2 continues to spread, there are still many questions for patients with psoriatic arthritis (PsA). Remarkably, it still remains unclear how PsA and disease-modifying anti-rheumatic drugs (DMARDs) could impact on COVID-19 outcomes (1-4).

The main aim of our study was to investigate COVID-19 incidence and signs/symptoms in PsA patients on biologic and targeted synthetic DMARDs (bDMARDs and tsDMARDs) attending the rheumatology outpatient clinics of the University of Naples Federico II. The study was approved by University Hospital Federico II (267820) and was conducted in conformity with the Declaration of Helsinki and its later amendments.

Between January 11 and April 1, 2021, every PsA patient with an existing appointment was called by phone and underwent a survey on clinical aspects of PsA (5). We also investigated on a previous or concomitant COVID-19 diagnosis and course.

Results showed that out of 350 consecutive patients, 43 (12.3%) received COVID-19 diagnosis, based both on clinical signs and positive oral/nasopharyngeal swab RT-PCR**.** Demographics and clinical characteristics of PsA patients with COVID-19 are reported in Table I.

Most of them were women (70%) with a mean age of 54.5±9.2 years. Thirty-six were on bDMARDs. Twenty-two patients were on TNF-α inhibitors, seven on the IL-12/23 inhibitor, ustekinumab, and seven on IL17 inhibitors. Seven patients were on the tsDMARD, PDE4 inhibitor, apremilast. 27.9% of these patients were in combined treatment with conventional synthetic DMARDs (csDMARDs). PsA treatment was discontinued in all the patients diagnosed with COVID-19.

Out of the 43 PsA patients with COVID-19, 25 subjects (58.14%) had five or more COVID-19 symptoms, while the remaining 18 patients (41.86%) showed up to four symptoms.

The most common symptoms were represented by arthralgia and fever, both found in 74.4% of the cohort, followed by fatigue (67.4%) and ageusia (65.1%)

Respiratory symptoms were reported by 26 patients (60.4%). Isolated cough verified in five patients (three on TNF-α inhibitors, one on IL-12/23 inhibitor and one on combined IL-12/23 inhibitor and methotrexate). Mild dyspnoea and cough verified in 21 patients on bDMARDs; out of these subjects, ten and five were on TNF-α and IL-17 inhibitors, respectively, and six on combined treatment with csDMARDs (three on TNF-α inhibitors and methotrexate, one on TNFα inhibitor and leflunomide, two on IL-17 inhibitors and methotrexate or sulphasalazine).

Table I. Demographics and clinical characteristics of 43 PsA patients affected by COVID-19.

Women n, %	30 (69.8%)
Age (years) mean ± DS	54.5 ± 9.2
Smokers n, %	13 (30.2%)
PsA duration (months) mean ±DS	11.5 ± 67.9
Prior cardiovascular disease n,%	14 (32.5%)
Prior renal disease n, %	0
Prior lung disease n, %	0
Prior diabetes mellitus n, %	1 (2.3%)
Concomitant therapy with csDMARDs n, %	12 (27.9%)
bDMARDs/tsDMARDs n, %	43 (100 %)
Fever n, %	32 (74.4%)
Arthralgia n, %	32 (74.4%)
Fatigue n, %	29 (67.4%)
Ageusia n, %	28 (65.1%)
Respiratory symptoms n, %	26 (60.4%)
Anosmia n, %	21 (48.8%)
Diarrhoea n, %	17 (39.5%)
Headache n, %	7 (16.3%)
Conjunctivitis n, %	5 (11.6 %)
Need for oxygen therapy n, %	5 (11.6%)
Arthritis exacerbation n, %	2 (4.6%)
Non-psoriatic skin lesions n, %	1 (2.3%)
Hospitalisation in ICU	1 (2.3%)
Ordinary hospitalisation	0
Death	0

COVID-19: coronavirus disease 2019; ICU: intensive care unit; n: number; PsA: psoriatic arthritis; pt: patient.

Severe dyspnoea verified in five patients, two of whom were on TNF-α inhibitors and three on IL-17 inhibitors, respectively. They all required domiciliary oxygen therapy and underwent treatment with low molecular weight heparins and prednisone (range of start dosage between 15 mg and 50 mg/daily) (mean duration: 10.2 days). Three of these five patients showed previous cardiovascular comorbidities (hypertension and heart failure in two and in one case, respectively).

For one female patient with concomitant NYHA-III heart failure and on anti-IL17 therapy, hospitalisation with discharge at three weeks was required.

In our cohort, other frequent symptoms were represented by anosmia (48.8%), diarrhoea (39.5%), headache (16.3%), and conjunctivitis (11.6%). Arthritis exacerbation and non-psoriatic skin lesions were found in a small proportion of patients (4.6% and 2.3%, respectively).

In this study, the clinical spectrum of COVID-19 manifestations spanned from paucysimptomatic to multisymptomatic spectrum. Arthralgia and fever, followed by fatigue and ageusia represented the most common symptoms. In a very small percentage of patients, there was the need for oxygen therapy, and just in one case, we verified the need of hospitalisation.

This study has some limitations: mainly, as a telephone-based investigation, many of the data could have under- or overestimated COVID-19 clinical expression.

Our findings are in line with previous studies showing that b- and tsDMARDs do not seem to contribute to an unfavourable COVID-19 evolution in PsA (6, 7).

Further studies on this important topic are still needed.

M. Tasso, *MD*
E. Mostacciuolo, *MD*
V. Ugoccioni, *MD*
A. Del Puente, *MD, PhD*
R. Peluso, *MD, PhD*
R. Scarpa, *MD*
L. Costa, *MD, PhD**
F. Caso, *MD, PhD**

**These authors contributed equally.*

Rheumatology Unit, Department of Clinical Medicine and Surgery, University of Naples Federico II, Naples, Italy.

Please address correspondence to: Raffaele Scarpa, Reumatologia, Dipartimento di Medicina Clinica e Chirurgia, Università di Napoli Federico II, via Sergio Pansini 5, 80131 Napoli, Italy. E-mail: rscarpa@unina.it

Competing interests: none declared.

References

1. GELFAND JM, ARMSTRONG AW, BELL S *et al.*: National Psoriasis Foundation COVID-19 Task Force Guidance for Management of Psoriatic Disease During the Pandemic: version 1. J *Am Acad Dermatol* 2020; 83: 1704-16.
2. CASO F, COSTA L, RUSCITTI P *et al.*: Could Sars-coronavirus-2 trigger autoimmune and/or autoinflammatory mechanisms in genetically predisposed subjects? *Autoimmun Rev* 2020; 19: 102524.
3. GIANFRANCESCO M, HYRICH KL, AL-ADELY S *et al.*; COVID-19 Global Rheumatology Alliance: Characteristics associated with hospitalization for COVID-19 in people with rheumatic disease: data from the COVID-19 Global Rheumatology Alliance physician-reported registry. *Ann Rheum Dis* 2020; 79: 859-66.
4. https://coronavirus.gimbe.org/
5. COSTA L, TASSO M, SCOTTI N *et al.*: Telerheumatology in COVID-19 era: a study from a psoriatic arthritis cohort. *Ann Rheum Dis* 2020 Jun 11 [Online ahead of print].
6. BRITO-ZERÓN P, SISÓ-ALMIRALL A, FLORES-CHAVEZ A *et al.*: SARS-CoV-2 infection in patients with systemic autoimmune diseases. *Clin Exp Rheumatol* 2021; 39: 676-87.
7. SCIRÈ CA, CARRARA G, ZANETTI A *et al.*; Italian Registry of the Italian Society for Rheumatology (CONTROL-19): COVID-19 in rheumatic diseases in Italy: first results from the Italian registry of the Italian Society for Rheumatology (CONTROL-19). *Clin Exp Rheumatol* 2020; 38: 748-53.