

**LETTER**

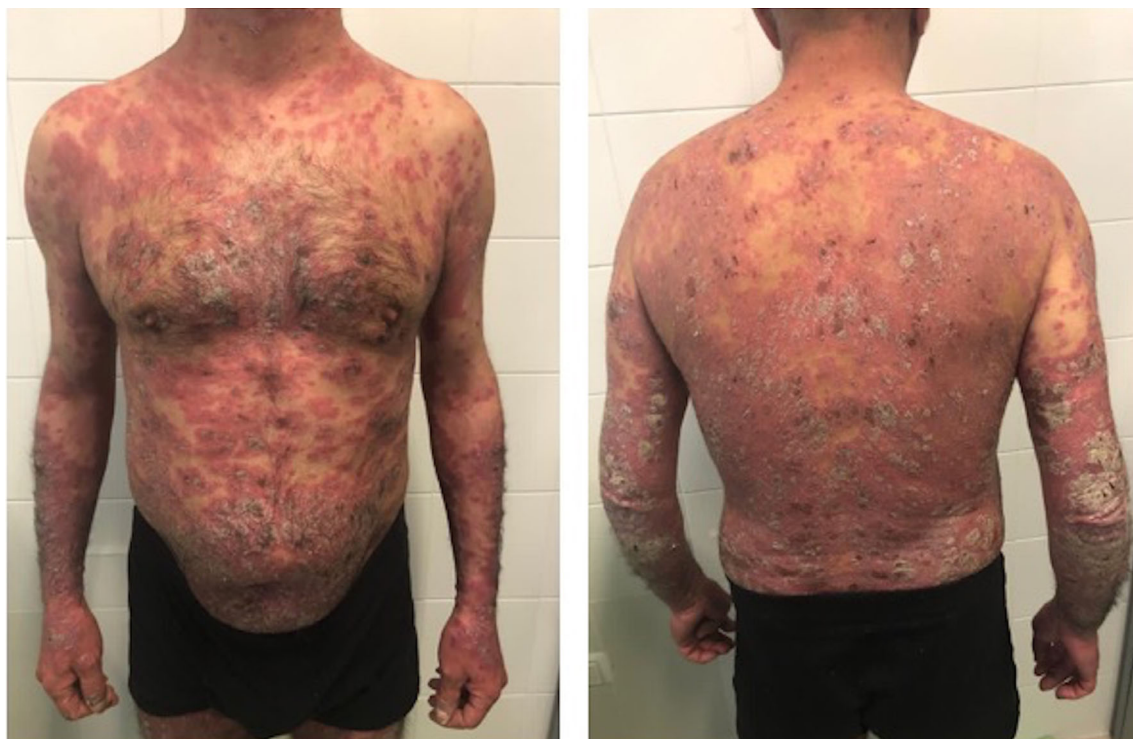
## Safety of secukinumab treatment in COVID-19 affected psoriatic patients

Dear Editor,

The coronavirus disease 2019 (COVID-19) pandemic has aroused much concern among psoriasis patients and their dermatologists about the risk of biologic therapies maintenance.<sup>1,2</sup> On one side, immune suppression although selective is feared to make patients more susceptible to the viral infection, or develop a more severe disease. On the other hand, stress-related worsening of psoriasis, and disease relapse at treatment discontinuation can be difficult to manage, especially considering the access limitation to hospitals and outpatients dedicated centers.<sup>3</sup> Among biologics, secukinumab is a fully human monoclonal antibody that selectively neutralizes interleukin (IL)-17A, a key cytokine involved in psoriasis and psoriatic arthritis. Preliminary reports on COVID-19 patients who were under secukinumab treatment suggest a favorable course,<sup>4-6</sup> except for one elderly multimorbid patient, requiring mechanical ventilation.<sup>7</sup>

We report two psoriasis patients, infected with COVID-19 while on long-term secukinumab administration, who rapidly recovered from the infection between the two scheduled doses.

First patient is a 57-year old man, with a history of hypertension and dyslipidemia, suffering from psoriasis and psoriatic arthritis for 20 years, referred to our Dermatology Unit after failure of several treatments, including cyclosporine, methotrexate, etanercept and adalimumab. In January 2018, his plaque psoriasis involved almost the entire body, with a psoriasis area severity index (PASI) of 36 (Figure 1) and secukinumab treatment was started at the recommended posology: 300 mg once/weekly from week 0 to 4, followed by 300 mg every 4 week. Psoriasis and arthritis improved significantly, reaching complete skin clarification. After 1 year, the patient reported a worsening of his arthritis and methotrexate 15 mg per week was added. On September 15, 2020, the psoriasis was still under remission (Figure 2), but the patient started feeling fatigue and a severe backache, as well as high temperature with shortness of breath and dyspnea. A real-time reverse transcriptase-polymerase chain reaction (RT-PCR) test for COVID-19 nucleic acid on nasopharyngeal swab gave positive result, and a thorax radiography showed a bilateral interstitial pneumonia. Methotrexate was stopped, while the scheduled monthly injection of secukinumab



**FIGURE 1** Severe plaque psoriasis of the trunk in a 57-year-old man before secukinumab treatment



**FIGURE 2** Same patient with maintained psoriasis complete remission during the hospitalization for COVID-19 bilateral pneumonia



**FIGURE 3** Plaque psoriasis of the trunk in a 39-year-old woman before secukinumab treatment

had already been administered. He started the COVID-19 regimen based on azithromycin 500 mg daily for 3 days, intravenous ceftriaxone 2 g daily for 5 days, intravenous dexamethasone 6 mg and heparin

6000 IU daily. Within a few days, fever, fatigue and dyspnea gradually subsided. On 15th October, the RT-PCR test resulted negative, and he was considered successfully healed. On 27th October, secukinumab



**FIGURE 4** Complete remission after the induction phase of the secukinumab treatment

could be administered as formerly scheduled, while methotrexate was not restarted.

The second case is a 39-year old woman, native from Cuba, affected with psoriasis since adolescence, previously treated with cyclosporine and methotrexate, each discontinued for side-effects. On October 2019 her PASI was 21 (Figure 3), and secukinumab was started at the recommended posology, with rapid improvement from the induction phase (Figure 4). One year later, her partner falls ill with COVID-19, and according to guidance for contacts, she underwent nasopharyngeal RT-PCR test on October 27, which resulted positive. The following days she manifested a slight body temperature increase, within 37.8°C and anosmia/ageusia for 1 week. No therapy was required and on November 17 she resulted negative to RT-PCR test. Few days after she could inject the scheduled dosage of secukinumab, without interruption.

Most experts agree to maintain psoriasis treatment with biologics, although dismissal should be considered when COVID-19 symptoms occur.<sup>1</sup> The long secukinumab half-life covered the whole period of illness in our patients, one with conclamant pneumonia and mild symptoms in the other. Current knowledge supports the role of several cytokines release in COVID-19, including IL17, especially in patients with pneumonia<sup>8</sup> and an anti-IL17 treatment may provide an additional benefit rather than be dangerous.<sup>9</sup> Our experience confirms that secukinumab can be safely continued in patients exposed to COVID-19, with a favorable course and rapid recovery even in the more critical patient.

#### CONFLICT OF INTEREST


The authors declare no potential conflict of interest.

#### AUTHOR CONTRIBUTIONS

The authors certify that the manuscript is original, never submitted to other journal for publication before. All authors contributed equally to the manuscript and had the opportunity to revise and approve the final text.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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#### REFERENCES

1. Price KN, Frew JW, Hsiao JL, Shi VY. COVID-19 and immunomodulator/immunosuppressant use in dermatology. *J Am Acad Dermatol.* 2020;82:e173-e175.

2. Lebwohl M, Rivera-Oyola R, Murrell DF. Should biologics for psoriasis be interrupted in the era of COVID-19? *J Am Acad Dermatol*. 2020;82:1217-1218.
3. Atzori L, Mugheddu C, Addis G, et al. Psoriasis health care in the time of coronavirus pandemic: insights from dedicated centers in Sardinia (Italy). *J Eur Acad Dermatol Venereol*. 2020;34:e247-e248.
4. Coskun Benlidayi I, Kurtaran B, Tirasci E, Guzel R. Coronavirus disease 2019 (COVID-19) in a patient with ankylosing spondylitis treated with secukinumab: a case-based review. *Rheumatol Int*. 2020;40:1707-1716.
5. Galluzzo M, Tofani L, Bianchi L, Talamonti M. Status of a real-life cohort of patients with moderate-to-severe plaque psoriasis treated with secukinumab and considerations on the use of biological agents in the Covid-19 era. *Expert Opin Biol Ther*. 2020;20:829-830.
6. Di Lernia V, Bombonato C, Motolese A. COVID-19 in an elderly patient treated with secukinumab. *Dermatol Ther*. 2020;33:e13580.
7. Damiani G, Pacifico A, Bragazzi NL, Malagoli P. Biologics increase the risk of SARS-CoV-2 infection and hospitalization, but not ICU admission and death: real-life data from a large cohort during red-zone declaration. *Dermatol Ther*. 2020;33:e13475. <https://doi.org/10.1111/dht.13475>. Epub ahead of print.
8. Liu Y, Zhang C, Huang F, et al. Elevated plasma level of selective cytokines in COVID-19 patients reflect viral load and lung injury. *Natl Sci Rev*. 2020;7:1003-1011.
9. Cafarotti S. Severe acute respiratory syndrome-coronavirus- 2 infection and patients with lung cancer: the potential role of interleukin-17 target therapy. *J Thorac Oncol*. 2020;15:e110-e113.