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# Psoriasis flares after COVID-19 vaccination: adherence to biologic therapy reduces psoriasis exacerbations: a case-control study

This study aimed to evaluate if patients under biologics have a lower risk of psoriasis flares after coronavirus disease 2019 (COVID-19) vaccination than other psoriatic patients. Of 322 recently vaccinated patients admitted for psoriasis at the Dermatological Psoriasis Unit during January and February 2022, 316 (98%) had no psoriasis flares after COVID-19 vaccination (79% under biologic treatment, 21% not biologically treated) and 6 (2%) presented psoriasis flares after COVID-19 vaccination (33.3% under biologic treatment, 66.6% not biologically treated). Overall, psoriasis patients under biologic treatment, developed fewer psoriasis flares after COVID-19 vaccination (33.3%), than patients not under biologic treatment (66.6%) ( $p=0.0207$ ; Fisher's exact test).

**Keywords:** COVID-19 vaccination, Psoriasis flare, Brodalumab, Guselkumab, Biological products, Biologic therapy

The coronavirus disease 2019 (COVID-19) pandemic urges large-scale vaccination, to contrast viral spread. However, newly developed COVID-19 vaccines confront us with uncertain vaccine indications in potentially at-risk populations.

Regarding psoriatic patients, recent guidance recommends COVID-19 vaccination, without discontinuing psoriasis treatment during the vaccination period [1]. Conversely, COVID-19 vaccination may induce psoriasis flares. However, in this era of biologics, patients accustomed to psoriasis remission fear recurrences [2], and psoriasis exacerbations must be contained to encourage COVID-19 vaccination.

This study aimed to evaluate if patients under biologics have a lower risk of psoriasis flares after COVID-19 vaccination, compared to other psoriatic patients.

During January and February 2022, all patients admitted for psoriasis at the Dermatological Psoriasis Unit were asked for recent COVID-19 vaccination. All vaccinated patients were asked and examined for psoriasis flares. Possible associations between psoriasis exacerbations and COVID-19 vaccination, patients' features, and administered psoriasis treatments were registered.

The present research complies with the guidelines for human studies and includes evidence that the research was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. Informed consent was obtained from all individual participants included in the study.

Of 322 admitted and recently vaccinated psoriatic patients, 316 (98%) had no psoriasis flares after COVID-19 vaccination. Of these, 251 (79%) were under biologic treatment, and 65 (21%) were not. Of 322, 6 (2%) presented psoriasis flares after COVID-19 vaccination. Of these, 2 (33.3%) were under biologic treatment, and 4 (66.6%) were not. Overall, psoriasis patients under biologic treatment, developed significantly fewer psoriasis flares after COVID-19 vaccination (33.3%), compared to psoriatic patients not under biologic treatment (66.6%) ( $p=0.0207$ ; Fisher's exact test).

More in detail, patients experiencing psoriasis flares under biologic treatment received Guselkumab (50%) and Brodalumab (50%). Noteworthy, on the suggestion of their general practitioner, biologic treatment was interrupted for over a month within the vaccination period. The patients were a 70-year-old male and a 71-year-old female. Among patients experiencing psoriasis flares not under biologic treatments, two received topical therapy (50%), and two were in stable remission without therapy (50%). Patients under topical therapy were a 72-year-old male and a 51-year-old female; patients without therapy were a 78-year-old male and a 46-year-old male.

Guidance for the best management of psoriatic patients during the COVID-19 pandemic was recently outlined by the American Academy of Dermatology Association [1]. The Association highlights psoriatic patients are more prone to thrombosis, comorbidities, and possibly to COVID-19 infection and infection outcomes. COVID-19 vaccination is strongly recommended, without discontinuing psoriasis therapy during the vaccination period [1].

Noteworthy, psoriasis treatment seems not to alter COVID-19 infection risk nor outcomes, encouraging psoriasis treatment continuation to reduce vaccine and/or infection-induced flares [1]. However, it has been suggested that patients under biologic treatment reduce administration frequency, or prefer topical therapy and approaches with less

impact on the immune system [3].

Conversely, in line with the guidance published by the American Academy of Dermatology for the management of psoriatic patients and the use of biologics during COVID-19 pandemic, the present statistically significant data ( $p=0.0207$ ), encourage biologic therapy adherence also during COVID-19 vaccination, to reduce psoriasis flares [1].

Psoriasis patients under biologic treatment possibly have a lower risk of developing psoriasis flares after COVID-19 vaccination. Adherence to biologic therapy is appropriate and essential to encourage COVID-19 vaccination, by reducing psoriasis exacerbations and the patients' fear of psoriasis recurrences.

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