

Onset/flare of psoriasis following the ChAdOx1 nCoV-19 Corona virus vaccine (Oxford-AstraZeneca/Covishield): Report of two cases

To the Editor

The Covid-19 global pandemic made the development of safe and effective vaccines against this deadly disease crucial. Three vaccines

have been granted Emergency Use Approval in India: Oxford-AstraZeneca/Covishield (Serum Institute of India Pvt. Ltd.), Covaxin (Bharat Biotech), and Sputnik V.¹ The ChAdOx1 nCoV-19 (Covishield)

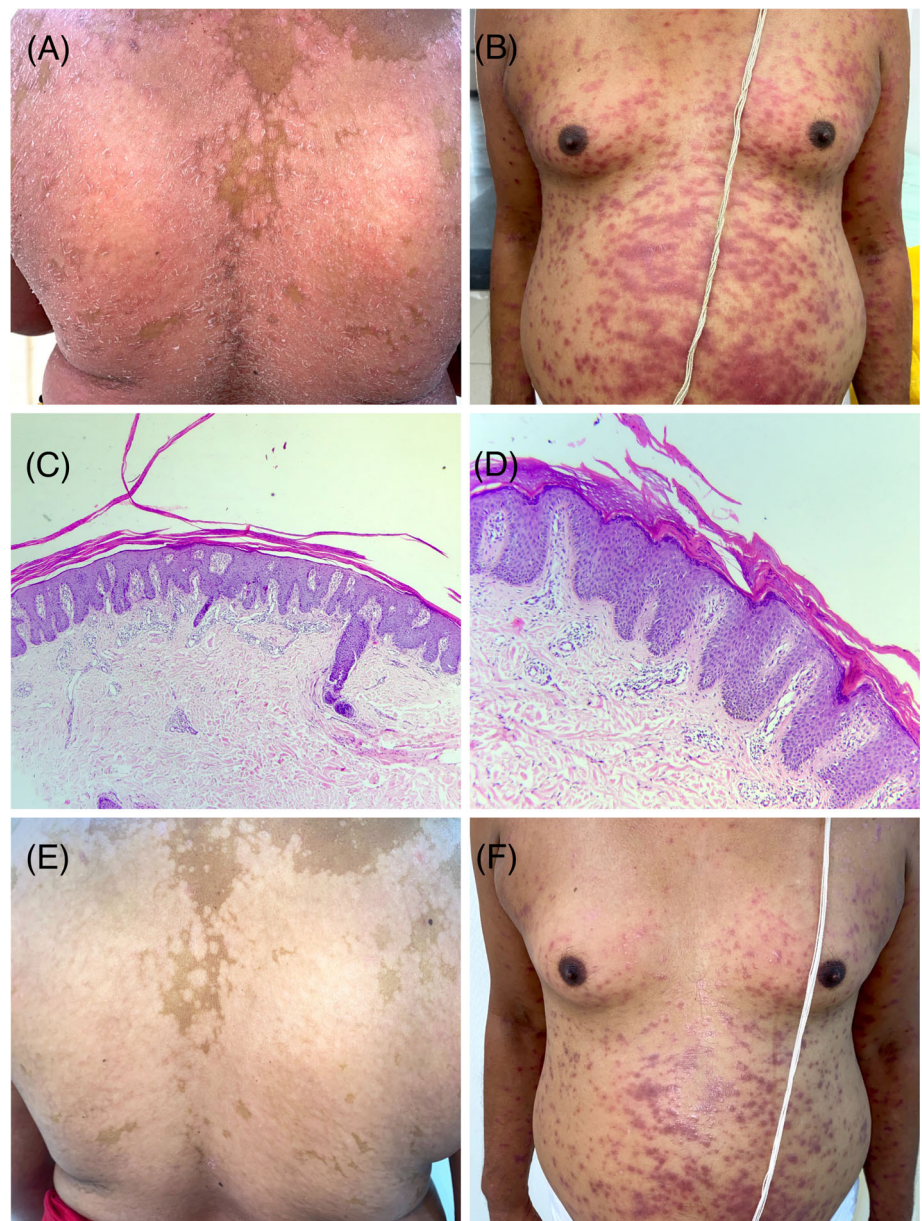


FIGURE 1 A 56-year-old lady with psoriasis exacerbation post-Covid-19 vaccination (A), Histopathology revealing parakeratosis, Munro's microabscesses and psoriasiform hyperplasia (H&EX10) (C), Significant improvement after 1 week (E). A 65-year-old man with new-onset psoriasis Vulgaris 10 days post-Covid-19 vaccination (B), Histopathology revealing parakeratosis, Munro's microabscesses and psoriasiform hyperplasia (H&EX10) (D), Improvement after 1 week (F)

vaccine is purported to be generally safe; but is associated with a low risk of thrombocytopenia and central venous thromboembolism.² So far, a single case of suspected delayed inflammatory cutaneous reaction after the Oxford-AstraZeneca vaccine has been reported in a 68-year-old woman with localized scleroderma. Her rash started 3 days postvaccination as pruritic, erythematous papules initially limited to her morphea lesion and later spread to the whole body.³ Patients on immunosuppressive therapy were excluded from trial cohorts of Covid-19 vaccines, and as many patients of psoriasis receive immunosuppressive drugs, they must have been under-represented in these trials.⁴ Hence accumulation of data regarding the propensity of different Covid-19 vaccines to aggravate or precipitate psoriasis might help update the current guidelines. Herein we report two cases of psoriasis exacerbation following administration of Covishield vaccine.

The first case is of a 56-year-old lady. She was a known case of psoriasis and was in remission for 6 months, maintaining on emollients. One week after her first dose of Covishield vaccine, her lesions flared up; however, she did not seek medical advice and continued emollients. Six weeks after the first dose, she received her second dose and 2 days later developed exacerbation of psoriasis lesions (Figure 1A). Dermoscopy and histopathology confirmed the diagnosis of psoriasis (Figure 1C).

The second case is of a 65-year-old man with no previous history of psoriasis. He presented with scaly erythematous papules and plaques over trunk and extremities, covering 30% of his body for 5 days (Figure 1B). Dermoscopy and histopathology confirmed the diagnosis of psoriasis (Figure 1D). The lesions had started 10 days after he received the second dose of Covishield vaccine.

We treated both patients with Apremilast (10 mg on day one, increased to 30 mg twice daily by day 7), antihistamines and emollients. They responded well with 70% and 50% decrease in Psoriasis Area Severity Index score by day 7 respectively (Figure 1E, F).

The most common side effects of the Covishield vaccine include injection site tenderness, malaise, fatigue, headache, fever, and flu-like symptoms.² However, there is a paucity of data regarding the effect of Covid-19 vaccines on skin diseases, including psoriasis. Psoriasis is characterized by Th1-type CD4⁺ T cells producing high levels of tumor necrosis factor- α (TNF- α) and interferon- γ (IFN- γ). An increase in TNF- α and IFN- γ production by CD4⁺ T cells on day 14 following a single dose of ChAdOx1 nCoV-19 (Covishield) vaccination has been reported.⁵ Secretion of these cytokines following vaccination appears to be responsible for the development/exacerbation of psoriasis. A case of generalized pustular psoriasis flare 4 days after the CoronaVac (inactivated virus vaccine) Covid-19 vaccine in a 72-year-old man has been recently reported from Turkey.⁶ There have also been reports of onset or flare of psoriasis following 2009 monovalent H1N1/seasonal influenza vaccination during the 2009–2010 flu season.⁷ The temporal correlation between Covid-19 vaccination and psoriasis development/exacerbation, and lack of other triggers, rapid improvement here suggests a possible causal relationship. Temporality, plausibility,

analogy and reversibility characteristics of Hill's criteria for investigating causality in epidemiological studies are fulfilled in the reported cases.⁸ However, strength, consistency and specificity can be established only if future reports of increases incidence of onset/flare of psoriasis are documented in patients receiving Covid-19 vaccines.


Thus, the potential of Covid vaccination acting as a trigger for psoriasis exacerbation cannot be denied. However, since the benefits outweigh the risks, all patients must receive the vaccine.

CONFLICT OF INTEREST

The authors declare there is no potential conflict of interest.

DATA AVAILABILITY STATEMENT

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

Prateek Nagrani
Rashmi Jindal 
Dikshita Goyal

Department of Dermatology, Venereology & Leprosy, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand, India

Correspondence

Rashmi Jindal, Department of Dermatology, Venereology & Leprosy, Himalayan Institute of Medical Sciences, Swami Ram Nagar, Doiwala, Dehradun 248140, Uttarakhand, India.
Email: rashmijindal98@gmail.com

ORCID

Rashmi Jindal  <https://orcid.org/0000-0002-0188-6486>

REFERENCES

1. Ministry of Health and Family Welfare, Government of India. COVID-19 vaccine faqs. 2021.
2. Serum Institute of India. Covishield faqs. 2021.
3. Bogdanov G, Bogdanov I, Kazandjieva J, Tsankov N. Cutaneous adverse effects of the available COVID-19 vaccines. *Clin Dermatol*. 2021. <https://doi.org/10.1016/j.clindermatol.2021.04.001>.
4. ChAdOx1 nCoV-19 Corona Virus Vaccine (Recombinant): Covishield product monograph. 2021.
5. Ewer KJ, Barrett JR, Belij-Rammerstorfer S, et al. T cell and antibody responses induced by a single dose of ChAdOx1 nCoV-19 (AZD1222) vaccine in a phase 1/2 clinical trial. *Nat Med*. 2021;27:270-278.
6. Onsun N, Kaya G, Isik BG, Gunes B. A generalized pustular psoriasis flare after CoronaVac COVID-19 vaccination: case report. *Health Promot Prospect*. 2021;11:261-262.
7. Sbidian E, Eftekahri P, Viguier M, et al. National survey of psoriasis flares after 2009 monovalent H1N1/seasonal vaccines. *Dermatology*. 2014;229:130-135.
8. Hill AB. The environment and disease: association or causation?. *J R Soc Med*. 2015;108(1):32-37.