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Letter to Editor

Psoriasis Flare After SARS-COV 2 Vaccination: A Retrospective Study.

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Abstract:

Background: The administration of SARS-CoV-2 vaccines is crucial in combating COVID-19, but concerns about adverse effects, particularly in patients with psoriasis, have arisen. This study investigates the impact of COVID-19 vaccination on psoriasis exacerbation.
Methods: We conducted a retrospective study from January 2021 to March 2022, including 120 psoriasis patients from the dermatology department at HASSAN II University Hospital, Fez, Morocco, all of whom received COVID-19 vaccines. We analyzed patient demographics, psoriasis types, treatments, and vaccination-related flare-ups.
Results: The median age was 49 years, with 90.8% female. Sinopharm was the most administered vaccine. Flare-ups were reported by 37.5% of patients, with higher rates after the first and second doses of Sinopharm. Flare-ups were primarily cutaneous. Systemic therapies were linked to more frequent flare-ups compared to topical treatments.
Conclusion: COVID-19 vaccination can exacerbate psoriasis, particularly with Sinopharm. Further research is needed to assess individual risks and tailor management strategies.

Keywords: psoriasis; exacerbation; vaccine; SARS-CoV-2.

Sir, The widespread administration of SARS-CoV-2 vaccines represents a pivotal step in combating the COVID-19 pandemic. However, concerns have arisen regarding potential adverse events, particularly in individuals with pre-existing autoimmune conditions such as psoriasis. While anecdotal evidence suggests a possible link between SARS-CoV-2 vaccination and psoriasis exacerbation, comprehensive studies on this association are lacking.

This was a retrospective study from January 2021 to March 2022, in patients followed for confirmed psoriasis at the dermatology department of HASSAN II university hospital in Fez,Morocco. Having all received the Covid-19 vaccine.

A total of 120 vaccinated psoriasis patients were included. The median age was 49 years, 90.8 % were female. 61.7% had plaque psoriasis, 8.3% had a palmoplantar form and 5% had a gout form. The pustular form was found in 5%, 11.7% had skin psoriasis associated with rheumatic involvement, 1.1% had an inverse form, 1.7% had nail form and 5.8% had a shape limited to the scalp. 46.6 % were undergoing a topical treatment (Steroids, Calcipotriol/Betamethasone), 14,2% receiving phototherapy, 5 % were on retinoids, 21,7 % were treated with Methotrexate and 13.3% % were on biotherapy (7.5 % IL-17 inhibitor, 5 % IL-23 inhibitor and 0.8 % TNF-α inhibitor). Only 27.5 % having received 3 doses of Covid-19 vaccine. The Sinopharm vaccine is the most administered vaccine across all doses, with the following percentages: 50.8% (1st dose), 40% (2nd dose), and 23.3% (3rd dose), followed by AstraZeneca and finally the Pfizer vaccine.

37.5 % reported flare-up after the vaccine. It was observed more in patients who received the Sinopharm vaccine with a percentage of 41% at the 1st dose, 37.5% at the 2nd dose and 21.4% at the 3rd dose. The site of the flare-up was respectively, cutaneous (27.5%), cutaneous and articular (3.3%), only at the level of the scalp (2.5%) and palmoplantar (2.5%). After a median delay of 17.09 days. Among patients on systemic therapy who had a flare-up of their psoriasis, 42.3% were on methotrexate, 83.3 % were on retinoid, 33.3% were on IL-17 inhibitor and 33.3% were undergoing treatment with IL-23 inhibitor. No flare-ups have been reported in patients treated with TNF-α inhibitor. While in the population treated with topical treatment, 47.2% developed an exacerbation after vaccination.

All flare-ups were minimal to moderate, no hemodynamic and respiratory repercussions were reported and patients were managed topically with maintenance of their previous treatments.

Psoriasis patients are prioritized for COVID-19 vaccination due to the prevalence of accompanying comorbidities and their often immunosuppressive treatment regimens, which can increase susceptibility to infections and lead to more severe clinical outcomes. Moreover, individuals with psoriasis undergoing immunosuppressive therapy face elevated risks of post-infectious complications, potentially including severe forms of SARS-CoV-2 infection [1]. Treatment approaches such as interleukin (IL)-17 inhibitors, crucial for effective psoriasis management, have been associated with compromised mucosal immunity, thereby heightening susceptibility to respiratory tract infections. Additionally, medications like anti-tumor necrosis factor (anti-TNF) agents, methotrexate, and cyclosporine, commonly used in psoriasis treatment, may also increase the risk of pulmonary infections, including SARS-CoV-2 [2].

"Psoriasis vaccinalis" has also been documented in association with Bacillus Calmette-Guerin, tetanus-diphtheria, and pneumococcal polysaccharide vaccines, exhibiting psoriasis-like eruptions and psoriatic arthropathy [3, 4, 5, 6].

While the exact causal connection between psoriasis and vaccination remains unclear, it is understood that the influenza vaccine triggers T-helper (Th)1 and Th17 immune responses, which may serve as a potential mechanism for vaccine-induced psoriasis. The immune reaction to the influenza vaccination likely involves the production of interleukin (IL)-6 and IL-22, leading to the generation of Th17 cells that contribute significantly to the development of the typical epidermal alterations seen in psoriasis [3, 7, 8]. On the other hand, Farkas et al. discovered that vaccines can activate plasmacytoid and dermal myeloid dendritic cells, which are involved in the inflammatory cascade of psoriasis. These dendritic cells serve as a link between environmental factors and T lymphocytes. They express Toll-like receptors, particularly subtypes 7, 8, and 9. Upon binding of the antimicrobial peptide LL37, these cells release inflammatory mediators such as IL-6, IL-12, TNF-α, and TGF-β. Subsequently, these mediators prompt T cells to differentiate into Th1 and Th17 cells, which then produce cytokines like TNF-α, IFN-γ, IL-12, IL-22, and IL-23, contributing to the skin changes characteristic of psoriasis [9,10]. This mechanism, probably involving Th17 cells, may explain the low incidence of flare-ups observed in patients under biotherapy compared to those undergoing other treatments.

In summary, the potential exacerbation of psoriasis following COVID-19 vaccination highlights the need for further studies. Despite the associated risks, it is important to assess the risk for each patient and, if necessary, calculate the risk of exacerbation to ensure a more tailored management approach.

Authors' Contributions:

Ikrame Bejja: Study design, data analysis, statistical analysis, manuscript preparation.
Zakia Douhi: Data collection, manuscript revision.
Sara Elloudi: Head of the psoriasis unit.
Meryem Soughi: Manuscript revision.
Hanane Baybay: Coordination among authors, manuscript revision.
Fatima Zahrae Mernissi: Literature review, manuscript editing.

Conflict of Interest Statement:
The authors declare no conflict of interest.

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