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De novo onset or exacerbation of psoriasis following the SARS-CoV-2 infection or COVID-19 vaccination | 1

It has been reported that infection with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and COVID-19 vaccination were associated with various cutaneous manifestations, either as flares of preexisting dermatoses or as *de novo* onset of immune-mediated dermatological disorders. Psoriasis is a chronic immune-mediated disease that can be exacerbated or manifest *de novo* following concomitant infections. In this case report, the authors from Italy presented a case series of bio-naïve patients who experienced exacerbations or *de novo* onsets of psoriasis following infection with the SARS-CoV-2 or COVID-19 vaccination.

Psoriasis is an autoimmune disorder characterized by the hyperproliferation of epidermal keratinocytes with inflammation of the epidermis and dermis. It manifests with erythematous plaques covered with silvery scales, particularly over the extensor surfaces, scalp, and lumbosacral region. The exact pathophysiology is unknown. It is thought to be multifactorial, with environmental, genetic, and immunological factors involved. Trauma, infection, and certain medications are common triggers.



The authors noted that several reports have been published regarding psoriasis flares following COVID-19 vaccination or SARS-CoV-2 infection; however, no standardized guidelines have been proposed to address the treatment of these psoriasis cases specifically. According to a recent systematic review that analyzed seven studies reporting new-onset



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psoriasis, 32 studies reporting psoriasis flares, and four studies reporting both conditions, most flares developed following mRNA COVID-19 vaccination. Psoriasis was most commonly diagnosed following immunization with mRNA COVID-19 Pfizer/BioNTech vaccines. The majority of patients were treated with topical agents, while some patients with exacerbation of psoriasis received a systemic treatment, including biologics.

About the Study and Results

The authors presented 28 patients who were bio-naïve and experienced flares or new onsets of psoriasis following COVID-19 infection or vaccination. Of these, 25 experienced an exacerbation and three experienced a new onset of psoriasis. The mean age was 52.6 years, and 68% were male.

Severe flares occurred in 25 patients (89%) who had been diagnosed with mild psoriasis before approximately 20 years. Among these 25 patients, 64% (16 patients) experienced a flare after COVID-19 vaccination, while the other 36% (9 patients) experienced an exacerbation after infection with SARS-CoV-2.

Three patients were diagnosed with a new onset of the disease. One patient developed moderate plaque psoriasis after acute COVID-19. The other two patients experienced a new onset of psoriasis after receiving the mRNA Pfizer/BioNTech vaccines. The first individual developed moderate plaque psoriasis after the third dose of the Pfizer/BioNTech vaccine, while the second individual experienced severe palmoplantar pustular and genital plaque psoriasis after the second dose of the Pfizer/BioNTech vaccine.

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All patients received biological treatment according to the Italian guidelines for managing psoriasis. The evaluation of PASI (Psoriasis Area and Severity Index) at baseline and week 16 was used to determine the effectiveness of biological treatment. They all started taking an interleukin (IL) inhibitor after testing negative for viral hepatitis, HIV, and tuberculosis. Anti-IL-23 medications were the most frequently prescribed (20 patients), with risankizumab being the most chosen treatment of this category (12 patients), followed by guselkumab and tildrakizumab (4 patients each). Six patients received an IL-17 inhibitor (three secukinumab, one ixekizumab, one brodalumab and one bimekizumab). Finally, two patients received ustekinumab, an anti-IL-12/23 drug. All patients were successfully managed, with higher rates of clinical responses after 16 weeks.

None of the patients receiving biological treatment experienced a flare of psoriasis, except for one female patient who developed a severe flare of generalized pustular psoriasis after receiving the second dose of the Pfizer/BioNTech vaccine and skipping the planned administration of ustekinumab. In this case, the immediate treatment with risankizumab led to almost complete skin clearance within 16 weeks. The authors stated that mild worsening of plaque psoriasis has been reported following COVID-19 infection or vaccination in 12% of their patients receiving biological therapy.



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Conclusion

This study described a case series of 28 patients who experienced *de novo* onset or flares of psoriasis following infection with the SARS-CoV-2 or COVID-19 vaccination. All of these patients were successfully managed with anti-IL-17 or anti-IL-23 medications. These data highlight the safety and efficacy of these treatments during the COVID-19 pandemic.

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