

## COVID-19-vaccine/SARS-COV-2-vaccine-inactivated-Sinovac-Biotech/tozinameran

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**Pemphigus vulgaris and aggravations of pemphigus vulgaris: 3 case reports**

In a case series, 3 women aged 31–69 years were described, who developed pemphigus vulgaris (PV) or aggravations of PV following COVID-19-vaccine, SARS-COV-2-vaccine-inactivated-Sinovac-Biotech or tozinameran vaccination [*not all routes, dosages and durations of treatments to reactions onsets stated*].

**Patient 1:** A 69-year-old woman developed PV following SARS-COV-2-vaccine-inactivated-Sinovac-Biotech vaccination. The woman received dose 1 of IM SARS-COV-2-vaccine-inactivated-Sinovac-Biotech [CoronaVac; Sinovac Life Sciences] 3 µg vaccine on 13 February 2021 and dose 2 on 13 March 2021. One week after the second dose of SARS-COV-2-vaccine-inactivated-Sinovac-Biotech, she presented to the hospital with development of mucocutaneous PV. Her history included thyroidectomy and cataracts. On admission, new onset of oral, scalp, trunk, and limb lesions were noted. She underwent a skin biopsy and had applied clobetasol ointment on cutaneous lesions for 1 month. On her second visit to the outpatient clinic, a significant improvement in her cutaneous lesions were noted and oral erosions were still moderately severe. Due to her cataracts history, steroid therapy was avoided. Therefore, she was initiated on methotrexate. Within 2 weeks, a rapid control was noted, and after 12 weeks, complete resolution of PV was noted. Currently, she was on follow-ups.

**Patient 2:** A 58-year-old woman developed aggravations of PV following COVID-19-vaccine vaccination. The woman presented to the hospital with a severe aggravation of PV. She had a history of severe mucocutaneous PV, which was treated with rituximab, azathioprine and unspecified systemic steroids. Her medical history included hypertension and right thyroid lobectomy, and drug therapy included amlodipine. After about 9 months of complete remission off therapy, she had only mild recurrence in her oral mucosa for about 1 month before vaccination in March 2021. Subsequently, she received dose 1 of inactivated COVID-19-vaccine [SARS-CoV-2] vaccine in in 4 April 2021, and dose 2 in 7 May 2021. However, within a few days, her PV aggravated especially in oral mucosa with increase in oropharyngeal erosions. On admission, she was treated with prednisolone therapy. Due to poor response to therapy, she was started on immunoglobulin [IVIG]. Eventually, an improvement in her condition was noted and resolved completely thereafter.

**Patient 3:** A 31-year-old woman developed aggravations of PV following tozinameran vaccination. The woman received IM tozinameran [BNT162b2; BioNTech/Pfizer] 30 µg vaccine on 19 June 2021. One week following vaccination, she developed moderate-severe aggravations of PV with new multiple erosions on her scalp and genital mucosa and increased oral erosions. It was reported that she had mild and transient oral erosions and skin blisters with skin bullae for a couple of years without any diagnosis of PV and had managed with unspecified topical corticosteroid ointments. About 3 weeks after vaccination, she went on a seaside vacation and developed multiple new bullous lesions on her body and sparing the skin under her swimsuit. On admission, an additional extensive oral and genital erosions were observed. Therefore, she was started on prednisolone. Eight week later, her PV symptoms resolved completely. Currently, she was on remission on minimal therapy.