Received: 7 June 2022 | Accepted: 27 July 2022

DOI: 10.1111/jdv.18493

LETTER TO THE EDITOR

Safety of the COVID-19 vaccine booster in patients with immunobullous diseases: A cross-sectional study of the International Pemphigus and Pemphigoid Foundation

Dear Editor,

There is a need to assess adverse events of booster immunizations in patients with autoimmune blistering disorders (AIBDs).

In this cross-sectional study, English-speaking patients with AIBDs aged ≥18 years, who were recruited from the database of the International Pemphigus and Pemphigoid Foundation, were asked to complete a COVID-19 vaccination-related web-based survey between 1 April 2022 and 30 April 2022. Only patients who received a COVID-19 booster vaccine (i.e. third dose in the case of previous Pfizer-BioNTech, Moderna or AstraZeneca vaccine OR second dose in the case of previous Johnson & Johnson vaccine) were included. Electronic informed consent was obtained, and the questionnaire was completed anonymously. The study was granted an exemption by the Institutional Review Board of the University of Southern California.

Valid questionnaires were collected from a total of 495 patients [378 women and 117 men, aged 18–94 years (median 66); 239 (48.3%) pemphigus vulgaris, 114 (23.0%) mucous membrane pemphigoid, 96 (19.4%) bullous pemphigoid, 29 (5.9%) pemphigus foliaceus and 17 (3.4%) other AIBDs]. The types of COVID-19 booster vaccines were Pfizer-BioNTech (55.6%; n = 275), Moderna (41.6%; n = 206), Johnson & Johnson (1.4%; n = 7), AstraZeneca (1.0%; n = 5) or other vaccine type (0.4%; n = 2). 189 (38.2%) patients reported not being on any therapy for their AIBD at the time of the booster, whereas others mentioned concurrent treatment with topical corticosteroids (26.1%; n = 129), oral corticosteroids (20.6%; n = 102), mycophenolate mofetil (13.3%; n = 66), rituximab (within 1 year) (12.9%; n = 64), doxycycline (7.5%; n = 37), dapsone (6.5%; n = 32), azathioprine (3.6%; n = 18), methotrexate (3.2%; n = 16), intravenous immunoglobulins (3.2%; n = 16), cyclosporine (0.4%; n = 2), cyclophosphamide (0.2%; n = 1), immunoadsorption/plasmapheresis (0.2%; n = 1) and/or other therapy (7.7%; n = 38). Out of 314 responders, 31 (9.9%) intentionally reduced or discontinued therapy for their AIBD in anticipation of the booster vaccine.

A total of 206 (41.6%) patients experienced COVID-19 booster vaccine-associated adverse events including self-perceived flare or worsening of their AIBD (17.0%; n = 84), the latter occurring within less than a week to more than 1 month after the injection (Table 1). Thirty-seven (44.0%) patients stated that this flare/worsening was confirmed by a dermatologist. Four out of 31 (13.0%) patients who modified their treatment prior to the booster were among those with disease aggravation. Fifty-four (64.3%) patients required additional treatment for their disease exacerbation, which led to its control in 37 (68.5%) cases, and only 4 (7.4%) patients had to be hospitalized for this reason. Thirty-seven (7.5%), 50 (10.1%) and 19 (3.8%) patients noticed a disease flare/worsening after their previous first, second and both the first and second COVID-19 vaccine doses, respectively, with 38 (55.9%), 16 (23.5%) and 14 (20.6%) of them reporting a milder, similar or worse postbooster course compared with the initial dose(s), respectively.

TABLE 1 Reported adverse events following the COVID-19 booster vaccine in patients with AIBDs

Study population (n = 495)	
Any adverse event, n (%)	206 (41.6%)
Muscle aches	135 (65.5%)
Pain, itching or redness at the injection site	129 (62.6%)
Sleepiness	121 (58.7%)
Headache	111 (53.9%)
Weakness	106 (51.5%)
Chills	97 (47.1%)
Fever	84 (40.8%)
Nausea	37 (18.0%)
Vomiting	10 (4.9%)
Flare or worsening of the AIBD, n (%)	84 (17.0%)
Time to flare/worsening after the booster	
<1 week	25 (29.8%)
1–4 weeks	42 (50.0%)
>4 weeks	17 (20.2%)

Overall, COVID-19 booster vaccines basically do not seem to be associated with an increased risk of adverse events when compared with the primary vaccination series.[1] This also applies to AIBD flare/worsening, which was mostly reported as being even comparatively milder after

the booster vaccine and which generally appears to be an uncommon and manageable event.[2] In addition, the results pertaining to actual immunobullous disease aggravation following COVID-19 booster vaccines need to be interpreted with caution as their validity is limited by subjective patient self-reports, with less than half being confirmed by a dermatologist. Our data may be of value to dermatologists regarding decision-making and patient counselling, particularly in the light of recent recommendations for second booster vaccine doses for immunocompromised persons (www.cdc.gov).

FUNDING INFORMATION

None.

CONFLICT OF INTEREST

R. Strong is a paid employee of the International Pemphigus and Pemphigoid Foundation; all other authors declared no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data of this study are available from the authors upon reasonable request.

Michael Kasperkiewicz[1]
Rebecca Strong[2]
Marc Yale[2]
Patrick Dunn[2]
David T. Woodley[1]

[1]*Department of Dermatology, Keck School of Medicine, University of Southern California, Los Angeles, California, USA*
[2]*International Pemphigus and Pemphigoid Foundation, Roseville, California, USA*

Correspondence
Michael Kasperkiewicz, Department of Dermatology, Keck School of Medicine, University of Southern California, Los Angeles, CA, USA.
Email: michael.kasperkiewicz@med.usc.edu

ORCID

Michael Kasperkiewicz https://orcid.org/0000-0003-0146-1661

REFERENCES

1. Kasperkiewicz M, Strong R, Mead K, et al. COVID-19 vaccine acceptance and hesitancy in patients with immunobullous diseases: a cross-sectional study of the International Pemphigus and Pemphigoid Foundation. Br J Dermatol. 2022;186:737–9.
2. Kasperkiewicz M. Association between COVID-19 vaccination and autoimmune bullous diseases: a random coincidence or rare event. J Eur Acad Dermatol Venereol. 2022. https://doi.org/10.1111/jdv.18202