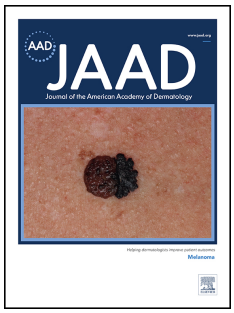
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.



Gaining Perspective on mRNA COVID-19 Vaccination Risk

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Gaining Perspective on mRNA COVID-19 Vaccination Risk

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Discussing COVID-19 vaccinations will be ongoing *ad infinitum*. “Vaccine makers should target the XBB variant of the coronavirus in a shot to be available in the fall” according to an advisory panel to the Food and Drug Administration. Although the COVID-19 landscape has improved this year, “those who remain vulnerable include the unvaccinated, people who are immunocompromised and those who have diabetes or chronic kidney, lung, cardiovascular or neurologic diseases. People 65 and older are also at risk, and that rises with age.” (1)

Despite our advances, questions regarding vaccination abound, especially for the mRNA-based vaccines (BNT162b2, Pfizer-BioNTech; mRNA-1273, Moderna). Most clinicians have likely encountered a patient(s) developing a dermatosis within a few weeks of receiving these vaccines, curious if the vaccine was the inciting culprit.

In this issue of the *Journal of the American Academy of Dermatology,* Ju et al assessed the risk of developing autoimmune and connective tissue disorders after mRNA-based COVID vaccinations. A total of 3,838,120 vaccinated individuals and 3,834,804 historical controls without evidence of COVID-19 were included. The risk of alopecia areata, psoriasis, vitiligo, anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitis, sarcoidosis, Behçet disease, inflammatory bowel disease, rheumatoid arthritis, systemic lupus erythematosus, systemic sclerosis, Sjögren syndrome, ankylosing spondylitis, dermato/polymyositis, and bullous pemphigoid (BP) was not significantly higher in vaccinated individuals than in controls, however there was an increasing trend for the risk of ANCA vasculitis and BP. The risk of myocarditis, pericarditis, and thrombocytopenia was increased in vaccinated patients compared to controls. The authors concluded that most autoimmune connective tissue disorders are not associated

with a significant increase in risk from vaccination, although they advise caution when interpreting results for rare outcomes due to limited statistical power. (2)

Anyone who develops a disease following a COVID-19 vaccination will easily find literature to support their suspicion that the vaccine was causative. Most are case reports or small case series. Examples include a 63-year-old Saudi hypertensive, diabetic woman the patient whose generalized morphea started appearing 2 weeks after receiving her second dose of Pfizer-BioNTech COVID-19 vaccine (3); a 67-year-old Japanese woman who developed cutaneous IgA vasculitis and nephropathy the day she received the second dose of the Pfizer-BioNTech COVID-19 vaccine (4).

The mechanism(s) causing these reactions remains undetermined – perhaps molecular mimicry between SARS-CoV-2 and vaccine components is at play in some cases. As all of these disorders existed in the pre-COVID-19 era, coincidence is always a consideration (your unfortunate patient with autoimmune or connective tissue disorders post-vaccine will not believe it).

It is our responsibility to put this in perspective for patients concerned about the risk of developing autoimmune or connective diseases from the vaccine, or whether to take the vaccine if they have these diseases. I concur with Kasperkiewicz and Woodley who state, “the association between COVID-19 vaccination and AIBDs [autoimmune bullous disorders] remains uncommon or even coincidental. This should encourage COVID-19 vaccination in patients with AIBDs, particularly in those whose disease is controlled at the time of vaccine administration, since benefits of vaccination far outweigh this questionable risk.” (5)

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