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.

Research letter

Disease flare in patients with dermatomyositis following COVID-19 vaccination

To the Editor: Since December 2020, COVID-19 vaccinations have effectively prevented severe SARS-CoV-2 disease. The American College of Rheumatology recommends that individuals with systemic autoimmune rheumatic diseases receive COVID-19 vaccination given increased severe illness risk.[1] Despite the benefits of vaccination, fear of disease flare postvaccination continued to drive vaccine hesitancy.[2]

Dermatomyositis (DM), an inflammatory disease with the potential for debilitating cutaneous, musculoskeletal, and systemic involvement, often requires treatment with immunosuppressive and/or immunomodulatory therapy.[3] Historically, vaccines have not been considered significant triggers of DM, with postvaccination DM flares or onset reported in isolated case reports and patient surveys only.[4,5] Therefore we sought to characterize the incidence and severity of DM flares following COVID-19 vaccination via retrospective chart review.

Individuals with DM who received ≥1 dose of COVID-19 vaccine between 12/2020 and 12/2021 were identified through the Mass General Brigham Research Patient Data Registry. A record review was performed to confirm DM diagnosis and vaccination dates. Postvaccination flare was defined as new or worsening DM symptoms within 30 days of COVID-19 vaccine or booster administration. Welch's independent sample t test and Fisher's exact (probability) test were performed with 2-sided P values. $P \leq .05$ determined statistical significance. This study was approved by the Mass General Brigham institutional review board.

Among 424 DM patients identified, 304 were included after record review (Supplementary Table I, available via Mendeley at https://doi.org/10.17632/783fstrwtm.1). 7.9% experienced a DM flare of any severity following COVID-19 vaccination, and 2.3% experienced flares substantial enough to warrant increased or new DM treatments (Supplementary Table II, available via Mendeley at https://doi.org/10.17632/p9wxw8c7y2.1). There were no statistically significant differences in demographic characteristics or types of vaccines received between patients who did and did not flare (Supplementary Table I). The most common flare symptoms were skin rash (74.0%; $n = 17$), muscle weakness (26.1%; $n = 6$), and muscle pain (21.7%; $n = 5$). Among patients who required increased or new DM treatment, the most common treatments were systemic corticosteroids (42.9%; $n = 3$) and methotrexate (28.6%, $n = 2$). Following flare onset, the mean time to symptom resolution was 122 days (standard deviation = 92.5).

Our findings suggest that the flare rate following COVID-19 vaccination among a large cohort of DM patients was slightly lower (7.9%) than previously reported (9.1%) in a survey of 66 patients with unspecified myositis.[4] Flare of cutaneous disease was most common, highlighting the role of dermatologic assessment in patients with DM flare postvaccination. Most disease flares were mild; 70.8% of flaring patients did not require DM treatment regimen changes.

The study's limitations include its retrospective nature, possibly incomplete patient chart documentation, and the inability to assess causal relationships between vaccination and flare. Of note, among patients who flared, five (20.8%) had medication changes for other reasons (eg, insurance approval) in the 3 months preceding COVID-19 vaccination, suggesting that the number of patients who had disease flare secondary to vaccination maybe even fewer. Our observations suggest COVID-19 vaccination is associated with infrequent and typically mild disease flares in a minority of patients with DM, supporting ongoing vaccination efforts in this vulnerable patient population. Additional research is needed to identify patients at higher risk of developing adverse effects from vaccination.

Catherina X. Pan, BA,[a,b] Nathaniel Goldman, BA,[b,c] Daniel Y. Kim, BS,[a,b] Rachael Rowley, BS, MS,[a,b] Morgan Schaefer, BS,[b] Avery H. LaChance, MD, MPH,[a,b] and Vinod E. Nambudiri, MD, MBA[a,b]

From the Harvard Medical School, Boston, Massachusetts[a]; Department of Dermatology, Brigham and Women's Hospital, Boston, Massachusetts[b]; and New York Medical College, Valhalla, New York.[c]

Drs Pan and Goldman are cofirst authors.

Dr Nambudiri is a cosenior author.

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Correspondence and reprint requests to: Vinod E. Nambudiri, MD, MBA, Department of Dermatology, Brigham and Women's Hospital, 221 Longwood Ave, Boston, MA 02115

E-mail: vnambudiri@bwh.harvard.edu

Conflicts of interest

Dr LaChance is the principal investigator for a research grant from Pfizer for a project exploring the role of the JAK/STAT pathway in cutaneous connective tissue disease.

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