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.

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Editorial

The adverse reactions to vaccines practice parameter 10 years on—what have we learned?

Check for updates

Ten years after the most recent update to the *Adverse Reactions to Vaccines Practice Parameter*,[1] the landscape for Allergists assessing vaccine allergies has developed in multiple directions. First and foremost, of course, is the impact of the severe acute respiratory syndrome coronavirus 2 pandemic and the resultant development of messenger RNA (mRNA) coronavirus disease 2019 (COVID-19) vaccines. Not only did we all benefit from the distribution of these vaccines, but the initial reports of allergic reactions to the mRNA vaccines[2] brought the field of vaccine allergy to the forefront. Second, vaccine misinformation has become rampant, and, as Allergists and Immunologists, we find ourselves in the privileged position to spend time to carefully provide facts to improve our patients' understanding of biology. Now, in 2022, we are able to provide our patients with reassurance regarding the safety, efficacy, and importance of vaccines.

The experience of a global pandemic has brought the devastating consequence of infectious disease to the forefront of our collective mind. Although prior generations were acutely aware of the pain and loss from infectious disease, the average modern-day American had been, before COVID-19, mostly spared of these details. Now, the importance of vaccine-induced protection from infectious disease is part of the news cycle. Almost all physicians have become overnight vaccine advocates, with prepared discussion points about the biology of mRNA and the development of the COVID-19 vaccines, but Allergists were thrust into a unique role in December 2020 with the initial reports of vaccine anaphylaxis after mRNA COVID-19 vaccines.[2] This unexpected development of allergic reactions to the vaccines immediately caused concern[3]; a new body of research into the cause of the reactions[4]; and the development of guidelines as to how to administer these vaccines safely.[5]

As we now reflect on those early days of vaccine administration, we realize that an overdiagnosis of anaphylaxis was occurring. The cause of this was 2-fold: first, the Brighton Collaboration Criteria, which was used to grade vaccine reactions,[6] caused overcategorization of anaphylaxis without objective signs and symptoms[7]; second, physicians and patients alike were quick to jump to a diagnosis of anaphylaxis without objective signs and symptoms, now termed immunization-related stress response.[8] This experience emphasizes the importance of careful history-taking and objective data assessment.

In *The adverse reactions to vaccines practice parameter 10 years on—what have we learned?*,[9] Dr. Kelso focuses in on the role of excipients in vaccine allergy, especially on the role of egg allergy. In the category of excipients, our experience with egg allergy and the influenza vaccine[10] has shown us that excipients are not always relevant when it comes to vaccine allergy, likely due to a threshold effect. The cautionary tale regarding influenza vaccines in patients with egg allergy is that this unleashed a Pandora's box, in that, despite multiple professional organizations stating it is safe to receive influenza vaccines regardless of egg allergy status, this association remains pervasive in patients' minds. Nevertheless, excipient allergy is complicated: gelatin is an important, albeit rare, cause of vaccine anaphylaxis,[1] and complete ignorance of vaccine excipients is an unacceptable approach to management of vaccine allergy.

We are all aware of the most recent relevant allergen for mRNA COVID-19 vaccines: polyethylene glycol. This ubiquitous polymer is present in both Pfizer-BioNTech and Moderna vaccines,[3] and allergy to this excipient remains as part of the Centers for Disease Control and Prevention guidelines for prescreening before vaccination.[11] Research is ongoing as to its exact role with regard to mRNA COVID-19 vaccine allergy,[4] and as allergists, our role is to test to these entities when clinically appropriate and then enable patients to receive their important COVID-19 vaccine.

The second category of patient consults for vaccine allergy is those who have a history of vaccine anaphylaxis or allergic reaction and are now obtaining a consult regarding candidacy for repeat vaccination or vaccination with another vaccine. In prior years, often, the approach was empirical avoidance. This approach is no longer acceptable: it is a public health necessity that patients should receive appropriate vaccines and exempting patients from decades of vaccinations is inappropriate and dangerous. Diligent, careful analysis of the original history followed by skin testing and administration of the vaccine under observation will clarify that the vast majority of patients can receive the vast majority of vaccines.[12]

As Allergists, our role is to help minimize the impact of allergic reactions on patients' lives. A childhood history of egg allergy resulting in lifelong avoidance of the influenza vaccine is a major failure,[1] which is exacerbated if this patient then becomes distrustful of other vaccines. In the year 2012, the devastation of COVID-19 and the importance of mRNA vaccines were not on the horizon. In 2022, the role of vaccines in prevention of illness, suffering, and death is part of our everyday vernacular. Each patient comes to us with their own questions and concerns related to vaccine allergy. We can reassure them the following: excipient allergy is rare but we have tests to elucidate whether they are at risk; a prior history of vaccine reaction does not preclude future related or unrelated vaccinations; and testing is important.[1] As Allergists in the year 2022, we are privileged to be able to provide the following reassurance: these vaccines save lives.

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