From the Pages of AllergyWatch

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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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For this edition of From the Pages of AllergyWatch, I have selected reviews from the July to August 2021 issue. The first article, with comments from Dr Lee, presents data from patients with mastocytosis who were able to receive their coronavirus disease 2019 (COVID-19) vaccinations after premedication. The next article, with comments from Dr Joshi, outlines a study investigating the risk of airborne peanut allergy triggering reactions in patients with peanut sensitivity. The third, with comments from Dr Hernandez-Trujillo, presents data from laboratory specimens illustrating that alpha-gal allergy is an increasing problem, especially in the South.
Stanley Fineman, MD, Editor-in-Chief, *Allergy Watch*

Coronavirus disease 2019 vaccine in mast cell disorders

In patients with mastocytosis, vaccination has been reported to cause exacerbation of symptoms of mast cell (MC) activation, including anaphylaxis. Anaphylactic reactions to the Pfizer-BioNTech messenger RNA (mRNA) COVID-19 vaccine have been reported. An approach to the safe administration of COVID-19 mRNA vaccine in 2 patients with mastocytosis and MC activation symptoms is described.
The patients were 2 female nurses with cutaneous and systemic mastocytosis, both of whom had direct contact with patients having COVID-19. One patient with indolent systemic mastocytosis presented with severe MC mediator–related symptoms including abdominal pain and bloating, diarrhea, pruritus and lesion-flare-up, and osteopenia. Before the first dose of the Pfizer-BioNTech mRNA vaccine, she was treated with H_1 and H_2 antihistamines (1 hour before) and montelukast 10 mg (1 and 24 hours before). Vaccination was carried out with no adverse effects.
The second patient had indolent systemic mastocytosis with a history of anaphylactic reactions to multiple drugs and MC mediator–related symptoms including migraines, pruritus, gastroesophageal reflux, and osteopenia. She received the same premedication regimen before her first dose of the COVID-19 mRNA vaccine, with myalgia as her only symptom.
The authors suggest that their premedication regimen may enable safe and successful administration of the COVID19 mRNA vaccine in patients with MC activation disorders. They emphasize that the procedure should be carried out under medical observation, in a hospital setting with intensive care unit availability.
Comments from Gerald B. Lee, MD: This letter to the editor describes successful mRNA COVID-19 vaccination in 2 patients with systemic or cutaneous mastocytosis. The authors recommend pretreatment with H_1 and H_2 antihistamines and montelukast given 1 and 24 hours before vaccination.
Rama TA, Moreira A, Castells M. mRNA COVID-19 vaccine is well tolerated in patients with cutaneous and systemic mastocytosis with mast cell activation symptoms and anaphylaxis. *J Allergy Clin Immunol*. 2021;147(3):877-878.

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Airborne peanut protein does not cause clinically significant reactions

Allergic reactions to foods typically occur after ingestion. However, patients are concerned about, and sometimes report, reactions to airborne peanut allergen, particularly in settings like restaurants and airplane travel. Clinical and experimental studies were performed to assess the risk of allergic reactions to airborne peanut allergens.

The clinical study included 84 children with a mean age of 10 years and diagnosed with peanut allergy. In an airborne peanut challenge, the children sat 0.5 m from a bowl of peanuts for 30 minutes. None of the children experienced moderate or severe reactions during this controlled challenge. Two experienced mild rhinoconjunctivitis, which required no treatment. Clinical reactions were unrelated to peanut- or Ara 2 h −specific immunoglobulin E (IgE).

In the experimental study, a SensAbues (SensAbues AB, Sweden) filter device was used to collect airborne peanut protein. An enzyme-linked immunosorbent assay detected only very low amounts of biologically active peanut proteins: median 166 ng/mL for dry-roasted and 33 ng/mL for roasted peanuts. Protein levels dropped sharply at longer distances from the peanut source. At a distance of 0 m, peanut protein levels increased with exposure time.

The challenge study did not reveal any moderate or severe reactions to airborne peanut protein in a group of children with peanut allergy. The experimental study found that levels of airborne peanut protein are very low and unlikely to trigger a clinically-significant reaction.

Comments from Shyam Joshi, MD: Smaller studies have reported the lack of aerosolization of peanut protein, yet this remains a constant fear for patients and caregivers. This well-designed study illustrates the absence of clinically-significant reactions in children exposed to an airborne peanut challenge, regardless of their IgE levels to peanut or Ara h 2. Taking their study a step further, the researchers measured peanut protein in the air and found levels to be extremely low, even at close distances. The levels detected were likely not high enough to cause a clinically-significant allergic reaction. The study should provide allergists supportive evidence when discussing the risk of airborne exposure with patients, especially those who have fears of peanut exposure in airplanes.

Bjorkman SL, Sederholm U, Ballardini N, et al. Peanuts in the air - clinical and experimental studies. *Clin Exp Allergy*. 2021;51(4):585-593.

Is alpha-gal really a problem in patients with a food allergy?

Patients with IE-gmediated allergy to galactose-alpha-1,3-galactose (alpha-gal) have delayed-onset allergic reactions after ingestion of mammalian meat. The true burden and geographic distribution of this emerging alpha-gal syndrome are unknown. This study analyzed recent US trends in alpha-gal IgE testing and diagnosis of the alpha-gal syndrome.

The retrospective analysis included 122,068 specimens from 105,674 patients tested for alpha-gal antibodies from 2010 to 2018. The study used deidentified data provided to the Centers for Disease Control and Prevention by the test manufacturer. At least 1 positive result for alpha-gal IgE was reported for 32.4% of patients. Positive results were more common in men than women, 43.3% vs 26.0%, and increased with age. The number of tests performed increased during the study period, although the rate of positive results declined: in 2018, the positivity rate was 29.8% in a total of 26,148 tests. Positive results were more likely to occur in the summer and fall months. More than two-thirds (67.5%) of positive specimens came from the Southern US Census region. The positivity rate ranged from 30.0% to 34.8% in the Midwest, Northeast, and South but was only 1.8% in the West. States with the highest rate of positive alpha-gal tests (2.35 per 100,000 population or higher) were Arkansas, Virginia, Kentucky, Oklahoma, and Missouri. In nearly 80% of cases, the alpha-gal IgE value on the first positive test was at least 0.35 kU/L.

From 2010 to 2018, more than 34,000 US patients tested positive for IgE antibodies to alpha-gal. Alpha-gal syndrome seems to be an increasingly recognized public health problem, with a geographic distribution consistent with exposure to *Amblyomma americanum* ticks. Clinicians must be aware of the possibility of this diagnosis, even in areas not endemic for the lone star tick.

Comments from Dr Hernandez-Trujillo, MD: This study reports an increasing number of patients with positive IgE to alpha-gal. Almost one-third of patients tested were positive and the numbers of positive tests increased over the years. A high index of clinical suspicion in patients without a known cause of anaphylaxis is essential. As more patients are tested, we will likely learn more on the true prevalence of this form of food allergy, especially its geographic distribution throughout the United States and the world.

Binder AM, Commins SP, Altrich ML, et al. Diagnostic testing for galactose-alpha-1,3-galactose, United States, 2010 to 2018. *Ann Allergy Asthma Immunol*. 2021;126(4):411-416.e1.