

TOP PAPERS OF THE MONTH

# Can We Manage Anaphylaxis More Effectively?

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**O’Keefe A, Clarke A, St Pierre Y. The risk of recurrent anaphylaxis. *J Pediatr.* 2017;180:217-221.**

Anaphylaxis is an important cause of pediatric emergency department (ED) visits and leads to 150-200 fatalities per year. Describing the epidemiology of anaphylaxis has been complicated by poor reporting and inconsistent coding, but recent studies suggest an overall increase in occurrence.

A small body of literature has examined recurrence rates, but prior to the study by O’Keefe and colleagues, there had been no prospective assessment for the recurrence or subsequent management of anaphylaxis.

O’Keefe and colleagues used data from the Cross-Canada Anaphylaxis Registry to determine the recurrence rate of anaphylaxis in children medically attended in an ED. A prospective cohort study was performed to examine the factors associated with recurrent anaphylaxis along with the prehospital and ED management of these patients.

Parents of children with anaphylaxis identified in 3 EDs and through an emergency response service were contacted annually after presentation regarding further reactions. Anaphylaxis was defined as a reaction that involved at least 2 organ systems and/or hypotension in response to a potential allergen. Baseline characteristics were collected at the initial inciting events, and included age, sex, medication use, suspected trigger, and management. Data were analyzed through Cox regression.

At the end of the study period, 292 children had been identified as having an episode of medical attended anaphylaxis. The response rate for the follow-up questionnaires was 68.5%. During 369 patient-years of follow up, 47 patients experienced 65 episodes of anaphylaxis. Among these 47 children, 35 experienced 1 recurrent reaction, 7 experienced 2 recurrent reactions, 4 experienced 3 recurrent reaction, and 1 child experienced 4 episodes of recurrent anaphylaxis. This resulted in a yearly recurrence rate of 17.6%.

Food was identified as the trigger for an event in 84.6% of cases. Milk was a common trigger of recurrent reactions, which has been noted in prior studies. This may reflect unclear labeling regarding milk protein products. A reaction triggered by food, the use of epinephrine during the initial episode, and asthma increased the odds of a recurrent reaction. Interestingly, patients whose initial reaction was triggered by peanut were less likely to have a recurrent reaction.

The overall use of epinephrine in the management of recurrent episodes was 66.2%. Outside of a health care facility, epinephrine was used 50.8% of the time. Among the patients who had recurrent reactions, 81.7% were brought to a health care facility for treatment. Among children who were brought a health care facility, 77.4% of them were treated with epinephrine before or after arrival.

While this study may be limited by potential recall bias, there remain several lasting messages. Patients and caretakers of those with identified episodes of anaphylaxis, especially to food, should be educated on the signs and symptoms of concern to help prompt delivery of medical attention. Physicians, patients, and families must all be educated on the importance of prompt epinephrine use in cases of anaphylaxis, as potential lives could be saved with appropriate administration.

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