A Majority of Parents of Children With Peanut Allergy Fear Using the Epinephrine Auto-Injector

PURPOSE OF THE STUDY. The purpose of this study was to identify factors that may contribute to parental fear of using an epinephrine autoinjector (EAI).

STUDY POPULATION. The study included 1229 parents of children with peanut allergy, all of whom had been prescribed an EAI. The mothers had a mean age of 37.9 years, and the fathers had a mean age of 40 years.

METHODS. Children with peanut allergy were retrospectively identified from 2000 to 2004 through chart review, and they were prospectively identified between 2004 and 2011 at their visit to Montreal Children’s Hospital. Parents of these children were mailed a questionnaire on whether and why they feared using an EAI, if their child had ever received an EAI, who prescribed the EAI, their level of satisfaction with the EAI training they received, the interval between reaction to prescription of the EAI, the type of EAI they were prescribed, whether they had changed devices, and the number of EAIs purchased. Fear was characterized as “afraid,” “somewhat afraid,” or “not afraid.”

RESULTS. Fifty-six percent of parents reported being afraid or somewhat afraid to use the EAI. The most commonly reported fears were hurting the child, incorrect use of the EAI, or fear of a bad outcome or death. Several predictors of parental fear were identified, including having a younger child and those with a shorter disease duration. In addition, their children were less likely to have experienced a severe reaction or to have required an EAI. With regard to parental characteristics, those who were characterized as having fear were slightly younger, had less satisfaction with EAI training, and were less likely to find the EAI easy to use. Factors associated with less fear included longer disease duration or older age of the mother.

CONCLUSIONS. This study found that a majority of parents have fear regarding use of the EAI. Factors that may predict fear include younger age of children, lack of severe reaction, and dissatisfaction with EAI training.

Anaphylaxis Knowledge and Practice Preference of Pediatric Emergency Medicine Physicians: A National Survey

PURPOSE OF THE STUDY. The goal of this study was to assess pediatric emergency medicine physicians’ knowledge and practice preferences for anaphylaxis.

STUDY POPULATION. A cross-sectional sample was used with participants recruited by using contact information obtained from the American Board of Pediatrics and the American Board of Medical Specialties. Participants were given a 12-item survey.

METHODS. A total of 1124 invitations were sent to the identified participants through SurveyMonkey. The survey included 12 questions covering demographic characteristics, physicians’ practices including medications preference, preferred route of epinephrine administration, duration of patient monitoring, discharge medications, prescription home with epinephrine autoinjectors, referral to specialists, and referral to educational Web sites. Emergency department settings were separated into university hospital, nonuniversity hospital with a residency training program, and community hospital with no residency training program. Data were collected by using the SurveyMonkey software.

RESULTS. Of the 1124 physicians, 56% responded, 3% opted out, and 0.9% no longer practiced medicine. The remaining did not respond. Overall, 93.5% correctly identified epinephrine as the treatment of choice for anaphylaxis but only 66.9% used the intramuscular route, which is the preferred method. Hospitals with residency programs had higher rates of intramuscular epinephrine use and higher volume of anaphylaxis cases, which in turn were associated with a decreased likelihood of admission for patients with anaphylaxis. In addition, 98.7% provided a prescription for an epinephrine autoinjector, 72.4% were referred to an allergy specialist, and 8.7% provided information to an educational Web site.
CONCLUSIONS. The majority of pediatric emergency medicine physicians reported using epinephrine for anaphylaxis but not all used the preferred route of administration.

REVIEWER COMMENTS. This study highlights the improved progress of emergency physicians in appropriately using epinephrine during anaphylaxis, which was previously reported to be as low as 16%. However, the preferred intramuscular route of administration could be improved along with referral to allergy specialists and providing information to educational Web sites on anaphylaxis.

Age-Dependent Sting Recurrence and Outcome in Immunotherapy-Treated Children With Anaphylaxis to Hymenoptera Venom

PURPOSE OF THE STUDY. The goal of this study was to investigate the rate of sting recurrence and outcome of Hymenoptera venom anaphylaxis in children treated with venom immunotherapy (VIT).

STUDY POPULATION. The study included a cohort of 83 Swiss children consecutively referred for Hymenoptera venom anaphylaxis between 1990 and 2007. Inclusion criteria were diagnosis of Hymenoptera anaphylaxis followed by commencement of VIT. Diagnosis of Hymenoptera anaphylaxis required a sting followed by a systemic adverse reaction affecting the respiratory and/or cardiovascular system, a positive intracutaneous test result with European honey bee (BV) and/or Vespucla (VV) venom, and specific IgE (>0.7 kU/L) to BV or VV. Forty-nine (59%) patients were treated with BV, 29 (35%) with VV, and 5 (6%) were treated with BV and VV. The average VIT duration was 3.6 years, and the average follow-up from commencement of VIT was 7.7 years. Age groups were stratified as children aged <6, 6 to 10, and 10 to 16 years. Boys were overrepresented in the population studied (67%).

METHODS. A standardized questionnaire administered by a nonblinded investigator targeted information about stings after commencement of VIT. The information included setting of sting, suspected culprit insect, and time course and severity of re-sting reaction.

RESULTS. Forty-five (56%) children were re-stung after commencement of VIT. The cumulative number of re-stings was 108, an average of 2.2 stings per re-stung patient. Younger children were re-stung more often than older children. In contrast, systemic reactions with re-sting increased with age. Sixty-three percent of all systemic reactions occurred with the first re-sting after commencement of VIT, 25% after the second re-sting, and 12% after the third re-sting.

The majority of systemic reactions with re-stings were limited to cutaneous symptoms. Two re-sting systemic reactions were severe and resembled the pre-VIT systemic adverse reactions. Commencement of VIT protected 94.1% of VV-allergic patients and 84.4% BV-allergic patients from systemic reactions with re-sting.

CONCLUSIONS. Repeat stings are a major concern in Hymenoptera-allergic patients: the majority of children in the study cohort were re-stung. Venom immunotherapy induced long-term protection from repeat systemic adverse reactions in the majority of children studied.

REVIEWER COMMENTS. Children with a history of an anaphylactic reaction to a Hymenoptera sting have a 30% to 40% risk of a similar reaction if re-stung. Venom immunotherapy is 75% to 98% effective in preventing sting anaphylaxis (Golden DB. Insect sting anaphylaxis. Immunol Allergy Clin North Am. 2007;27[2]:261–272). In the United States, VIT is rarely given to preschool-aged children. Four patients in the present study were aged <4 years; they all tolerated VIT well. This study found that young children have a high risk of being re-stung, that VIT is effective for preventing anaphylaxis in young children (3.4% had a systemic reaction with re-sting), and that VIT is well tolerated in young children. Any patient who has had a systemic reaction to a Hymenoptera sting should have an epinephrine autoinjector and should be evaluated by an allergist/immunologist.

The Economic Impact of Childhood Food Allergy in the United States

PURPOSE OF THE STUDY. The goal of this study was to determine the economic impact of childhood food allergy in the United States and caregivers’ willingness to pay for food allergy treatment.

STUDY POPULATION. The study was a cross-sectional survey of 1643 US caregivers of a child with a current food allergy.

METHODS. Caregivers were asked to quantify the direct medical, out-of-pocket, lost labor productivity, and related opportunity costs. Caregivers were also asked about their willingness to pay for a theoretical “safe and effective food allergy treatment that allowed the child to eat all foods.”

RESULTS. The overall economic cost of food allergy was estimated at $24.8 billion annually ($4184 per year per child). Annual direct medical costs were $4.3 billion or...
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