ANAPHYLAXIS

RISK OF ANAPHYLAXIS AFTER VACCINATION OF CHILDREN AND ADOLESCENTS


Purpose of the Study. Anaphylaxis is a risk of vaccination. This study retrospectively quantified the risk in a population of pediatric patients.

Study Population. Children and adolescents enrolled in 4 West Coast health maintenance organizations that participated in the Vaccine Safety Data Link Project between 1991 and 1997 were studied.

Methods. A total of 7,644,049 vaccine doses were administered to 2,226,907 children between the ages of 0 and 19 years at 3 sites and between 0 and 6 years at a fourth site. Potential cases of anaphylaxis were identified by using International Classification of Diseases, 9th revision, codes suggesting anaphylaxis. A total of 657 cases were reviewed, of 664 cases of interest. Missing chart information or cause of reaction were excluded 7 cases. Criteria including organ systems involved in reactions, timing of reactions after vaccination, and treatments were reviewed, to identify possible or probable cases of anaphylaxis. Two analyses were performed. One included all sites, and 1 included a single site for which more detailed data on outpatient diagnoses were available.

Results. Six possible cases of anaphylaxis were identified. After a more detailed chart review, 2 cases were considered unlikely to be anaphylaxis, 1 case was unlikely to be secondary to vaccination, and 1 case of anaphylaxis predated and was not attributable to vaccination. The final risk of anaphylaxis was calculated as 0.26 cases per 1,000,000 doses (2 cases per 7,644,049 doses). At the single site with more complete data on outpatient diagnoses, a risk of 1.5 cases per 1,000,000 doses was calculated. Rates for individual vaccines ranged from 0 to 14.4 cases per 1,000,000 doses. Most reactions were seen with diphtheria-and tetanus-containing vaccines, hepatitis B vaccine, measles-mumps-rubella vaccine, and oral polio vaccine. These vaccines were also more commonly administered. No reactions were seen with diphtheria-tetanus-acellular pertussis vaccine, influenza vaccine, inactivated polio vaccine, adult diphtheria-tetanus vaccine, hepatitis A vaccine, or varicella vaccine. However, these vaccines were less commonly administered. No deaths resulted from the anaphylactic episodes. No association was made with atopic status.

Conclusions. The frequency of vaccine-associated anaphylaxis is very low. Nonetheless, providers should be prepared to provide immediate treatment should it occur.

Reviewer’s Comments. Vaccination remains one of the most effective preventative treatments provided for children. Some advocates for better access to vaccination lobby for administration of vaccines at locations where acute health care is absent (eg, pharmacies). Although the risk of anaphylaxis is extremely low, it is not negligible. Providers of vaccines must be prepared to provide immediate treatment if anaphylaxis should occur, and society must determine when the need for vaccine access outweighs this risk.

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ANAPHYLAXIS: RISK FACTORS FOR RECURRENCE

Mullins RJ. Clin Exp Allergy. 2003;33:1033–1040

Purpose of the Study. To determine the incidence of anaphylaxis and risk factors for recurrence.

Study Population. Four hundred thirty-two patients with anaphylaxis who were referred to a community-based specialist practice in the Australian Capital Territory were studied. Twenty-seven percent were of school age (5–18 years of age).

Methods. Patients referred to an allergist for evaluation of anaphylaxis were enrolled during a 5.5-year period and evaluated prospectively. Medical record review, patient questionnaires, allergy skin testing, and challenge testing (for a small subset of patients) were used.

Results. Of 432 patients (48% male, 73% atopic; mean age: 27.4 years; SD: 19.5 years; median: 26 years) with anaphylaxis, 260 patients were examined after the first episode; 172 experienced 584 previous reactions. Fifty-four percent of index episodes were treated in a hospital. Causes were identified for 91.6% patients, ie, food (61%), stinging insects (20.4%), or medication (8.3%). The minimal occurrence and incidence of new cases of anaphylaxis were estimated as 12.6 and 9.9 episodes/100,000 patient-years, respectively. Follow-up data were obtained for 304 patients (674 patient-years). One hundred thirty experienced additional symptoms (45 serious), 35 required hospitalization, and 19 were administered epinephrine. Accidental ingestion of peanuts or tree nuts caused the largest number of relapses, but the highest risk of recurrence was associated with sensitivity to wheat and/or exercise. Rates of overall and serious recurrence were 57 and 10 episodes/100 patient-years, respectively. Among patients prescribed epinephrine, three-fourths of the patients carried it, two-thirds of the doses were in date, and only one-half of the patients faced with serious symptoms administered epinephrine. Five patients developed new triggers for anaphylaxis.

Conclusions. In any 1 year, 1 of 12 patients who have suffered anaphylaxis will experience recurrence and 1 of 50 will require hospital treatment or will use epinephrine. Compliance with carrying and using epinephrine is poor. Patients occasionally develop new triggers.

Reviewer’s Comments. There are few studies on the incidence or recurrence of anaphylaxis, but the limited data suggest that the incidences of anaphylaxis and food allergy...
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