ANAPHYLAXIS

Allergic Reactions in the Community: A Questionnaire Survey of Members of the Anaphylaxis Campaign

PURPOSE OF THE STUDY. To investigate the circumstances and clinical characteristics of food allergies in adults and children in the community.

STUDY POPULATION. Six thousand of the United Kingdom Anaphylaxis Campaign members, both children and adults. The Anaphylaxis Campaign is the major British patient resource group for people who have suffered severe allergic reactions.

METHODS. The Anaphylaxis Campaign members were asked via a newsletter to report any food reactions during the 6-month period.

RESULTS. One hundred nine respondents reported 126 reactions during the study period; 75 were children (<16 years old; median: 6 years old at the time of reaction). More boys than girls were reported to have had reactions, but more women reported reactions than men ($P < .05$). Specific foods were identified in 112 (89%) of the reports; peanut and tree nuts were responsible for most reactions in both children and adults. Children with asthma reported more severe reactions than those without asthma ($P = .008$), although frequency or severity of recent asthma symptoms was not associated with severity of allergic reaction reported. One fifth of the children reported a reaction in school or day care. Self-injectable epinephrine was used in 35% of the severe reactions and 13% of the nonsevere reactions ($P = .01$). One quarter of the adults (3 of 12) who received a dose of epinephrine also received a second dose, whereas only 10% of the children (one of 10) required a second dose of epinephrine.

CONCLUSIONS. The allergens implicated in this report reflect previous data from similar patient groups in North America. Asthmatic children suffer more severe reactions than nonasthmatic children. Even when it is prescribed and available, self-injectable adrenaline seems underused in severe reactions. The incidence of severe but nonfatal allergic reactions in the United Kingdom may have been underestimated in the past.

REVIEWER COMMENTS. Limited data are available regarding details of treatment of food allergic reactions in the community, but published experience consistently demonstrates underuse of epinephrine for treatment of food anaphylaxis. This underscores the need to continually educate food-allergic patients on the indications for epinephrine administration. In addition, although the availability of the second dose of self-injectable epinephrine should be recommended to all food-allergic patients, children seem to be at lower risk for having severe reactions requiring treatment with multiple doses of epinephrine.

Parental Use of EpiPen for Children With Food Allergies

PURPOSE OF THE STUDY. Food allergy affects up to 6% of children, and adverse reactions can be fatal. Appropriate emergency treatment consists of early administration of injectable epinephrine. Previous studies have revealed deficiencies in parental knowledge surrounding indications for self-injection, deficiencies in the method of EpiPen administration, and underuse in children experiencing anaphylaxis. This study explores whether underuse of EpiPen may be attributed to parental discomfort with administration, as measured by a lack of parental empowerment and knowledge of proper administration.

STUDY POPULATION. Parents of children with physician-diagnosed food allergy who had been prescribed an EpiPen.

METHODS. A self-administered survey was mailed to parents of children with food allergy, recruited through a food-allergy support group and a pediatric allergist’s practice. The questionnaire collected demographic information, medical history, history of previous “life-threatening allergic reaction(s),” past experience with EpiPen use, and knowledge of EpiPen indications. Knowledge was assessed with a series of multiple-choice and true/false queries. Perceived parental comfort with EpiPen administration was measured with a 10-cm analog scale, anchored with “uncomfortable” versus “very comfortable” at either end. Empowerment was measured with a 16-item instrument, including statements directly from or modified from the previously validated Family Empowerment Scale.

RESULTS. Of 360 mailed surveys, 165 eligible surveys were included in the study (46%). The majority of respondents were married white mothers with college or advanced degrees. The children of respondents ranged in age from 1 to 19 years. Previous anaphylaxis was reported in 70 responses (42%). Fourteen parents (8%) had administered the EpiPen to their child. Factors correlating with parental comfort with EpiPen administration included previous administration of EpiPen, EpiPen training, and high empowerment scores. Neither a history of previous anaphylaxis nor parental knowledge correlated with an increased level of reported comfort with EpiPen administration.
CONCLUSIONS. Increased empowerment scores directly correlated with increased parental comfort with EpiPen use. Although increased knowledge scores did not prove to be a significant contributor to parental comfort, training on EpiPen use is an important component in improving parental comfort. The authors question the impact of other psychological factors, such as fear, that may contribute to underuse of the EpiPen.

REVIEWER COMMENTS. Previous studies of parental EpiPen administration have reported incorrect use of autoinjectors despite training at the time of prescription. This study suggests that factors beyond parental knowledge are critical for proper administration of this potentially lifesaving medication. The importance of hands-on training to increase caregiver comfort is underscored by this study. Demonstration units and training videos are available free of charge through the manufacturers for EpiPen and the Twinject, another epinephrine self-injection unit not discussed in this study.

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Recognition, Evaluation, and Treatment of Anaphylaxis in the Child Care Setting

PURPOSE OF THE STUDY. Although many young children with a history of allergic reactions or anaphylaxis spend considerable time in child care centers, little is known about the centers’ knowledge of, experience with, and capacity to treat anaphylaxis. The purpose of this study was to evaluate the ability of child care centers to recognize, evaluate, and treat anaphylaxis episodes.

STUDY POPULATION. Children aged 1 to 6 who attended child care center in the suburbs of Chicago, Illinois.

METHODS. Eighty-five independent child care centers in suburbs of Chicago were selected randomly. They were contacted by telephone and asked to join the study by completing an initial questionnaire about allergic reactions and anaphylaxis. The center directors and teachers were then offered an allergy seminar on anaphylaxis avoidance, recognition, evaluation, and treatment. After the seminar, center directors were given a posttest that included some of the questions from the original questionnaire.

RESULTS. Of the 85 centers, 44 agreed to participate. Forty-two centers completed the surveys before the seminar and 39 after the seminar. On average, each center had up to 7 children with an identifiable food allergy. The most commonly reported source of education concerning allergies was information provided by the parents. Before the seminar, 24% of child care centers would administer intramuscular epinephrine for a severe allergic reaction. After the seminar, 77% of centers stated they would administer intramuscular epinephrine (P < .001). In addition, center staff significantly improved their knowledge of symptoms of allergic reactions and the correct methods of intramuscular epinephrine administration.

CONCLUSIONS. There is a knowledge deficit in anaphylaxis education at child care centers for children 1 to 6 years old. Intervention with individual education seminars can significantly increase the ability of child care center staff to recognize, evaluate, and treat anaphylaxis.

REVIEWER COMMENTS. Although it is encouraging that the staffs at child care centers seem to be able to learn how to recognize and treat allergic reactions and anaphylaxis, it is at the same time discouraging that such a small percentage would have done so correctly before the seminar. Most child care centers receive their education from discussions with parents. However, studies have shown that only 50% of parents could identify all the critical steps for proper usage of epinephrine. Therefore, I agree with the authors that it is critical that health care professionals become more involved in the education of parents and the staffs of child care centers. In addition, detailed treatment plans should be written to help guide centers in the proper care of allergic reactions.

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Differences in Race, Ethnicity, and Socioeconomic Status in Schoolchildren Dispensed Injectable Epinephrine in 3 Massachusetts School Districts

PURPOSE OF THE STUDY. To analyze the demographic characteristics of schoolchildren dispensed injectable epinephrine in 3 school districts with widely diverse socioeconomic, racial, and ethnic populations.

STUDY POPULATION. Students (prekindergarten to grade 12) from 3 school districts in Massachusetts (n = 21 875) were evaluated. Two of the school districts were affluent, suburban towns outside of Boston (5855 students). The third district (16 020 students) was also a Boston suburb but with a very low per-capita income, with 23% of the school-age population living below the poverty line. The 2 suburban districts were 92% and 95% white, respectively, and the third district was 60% nonwhite.

METHODS. All school districts in Massachusetts are required to report the number of students using daily or as-needed prescription medications to the Department of
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