examine long-term effects and to compare results with a control group.

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FOOD ALLERGY AND ANAPHYLAXIS

A Randomized, Double-Blind, Placebo-Controlled Study of Milk Oral Immunotherapy for Cow’s Milk Allergy

PURPOSE OF THE STUDY. To determine the safety and efficacy of milk oral immunotherapy (OIT) in desensitizing children with cow’s milk allergy.

STUDY POPULATION. Twenty children, 6 and 21 years of age, with an immunoglobulin E (IgE)-mediated cow’s milk allergy.

METHODS. This study was a randomized, placebo-controlled trial with subjects randomly assigned to milk or placebo OIT. OIT was administered in 3 phases: (1) initial build-up day; (2) daily home dosing with 8 weekly, in-office, dose increases; and (3) continued home daily maintenance dosing (500 mg) for 13 weeks. Before and after OIT, subjects had double-blind, placebo-controlled, food challenges, end point-titration skin-prick tests, and milk-specific serological studies performed. Symptom diaries and adverse reactions were recorded.

RESULTS. Subjects were randomly assigned to milk (N = 12) or placebo (N = 7) OIT. Food challenges after OIT showed a significant difference in the cumulative dose that induced a reaction between the 2 groups. The active treatment group had a median milk threshold of 40 mg before OIT and 5140 mg after OIT, whereas the placebo group showed no change from their median pre-OIT level of 40 mg (P = .002). There were no significant differences between groups in the change from baseline to end of OIT for end point-titration skin-prick test results and levels of milk-specific IgE; however, milk-specific IgG4 showed a significant increase in the active group (P = .002). Six of 7 subjects on placebo underwent open-label active treatment after the study, and all demonstrated a significant change in the milk dose threshold after OIT (median dose: 8140 mg). Adverse events (typically mild-to-moderate severity) were seen in 35% of subjects who received active treatment and in 1% of those who received placebo treatments, with 90% of adverse reactions being transient and requiring no treatment. Four epinephrine doses were used in 4 different subjects who received active treatment.

CONCLUSIONS. Milk OIT is effective in the treatment of cow’s milk allergy, with anticipated and acceptable adverse effects noted.

REVIEWERS COMMENTS. Oral and sublingual administration of allergen-specific immunotherapy has become increasingly important in the field of food allergies. These therapies have the potential not only to protect patients from serious reactions (clinical desensitization) but also possibly to allow for development of tolerance to the food allergen. This study demonstrated an increased threshold for reactions to milk in children treated with OIT, indicating clinical desensitization to the allergen. Of the reactions noted, most were not serious and did not require any treatment, which illustrates the relative safety of OIT. However, dosing protocols and length of therapy need to be further investigated (including long-term tolerance assessments), to provide improved efficacy with the lowest adverse effects.

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Early Consumption of Peanuts in Infancy Is Associated With a Low Prevalence of Peanut Allergy

PURPOSE OF THE STUDY. To determine the prevalence of peanut allergy (PA) among Israeli and United Kingdom Jewish children and to evaluate the relationship of PA to peanut consumption by infants and mothers.

STUDY POPULATION. The study included Jewish children between the ages of 4 and 19 years who attended targeted primary and high schools. Eligible Jewish schools in greater London, United Kingdom, and Israeli schools in the Mehoz Merkaz region of Tel Aviv were selected because they were thought to represent comparable residential environments. The mothers of Jewish infants 4 to 24 months of age in general practitioner clinics in the United Kingdom and Tipat Halav clinics in Israel were also surveyed about the timing of ingestion of peanut.

METHODS. Two validated questionnaires were used. The Food Allergy Questionnaire was completed by high school pupils and by parents on behalf of primary school pupils; it asked about allergies to cow’s milk, hen’s egg, sesame, peanut, tree nuts, asthma, hay fever, and eczema and parental occupation. The Food Frequency Questionnaire, a validated consumption questionnaire given to mothers in the waiting room, made a detailed determination of peanut, sesame, and other solid-food consumption during the child’s first year and by the
mother during pregnancy and lactation. All children with a questionnaire-based diagnosis of PA were invited for allergy testing; PA was confirmed if skin-prick test results, specific immunoglobulin E (IgE) measurements, or both were greater than the 95% positive predictive values or if children had a positive oral peanut-challenge result.

RESULTS. The Food Allergy Questionnaires were distributed to 10,786 children, and 81.8% were returned. Mothers returned 176 Food Frequency Questionnaires; none declined participation. The prevalence of PA in the United Kingdom was 1.85% and that in Israel was 0.17% (P < .001). After adjustment for atopy, the relative risk for PA in the United Kingdom was 5.8 (95% confidence interval: 2.87–11.8) for all children and 9.8 (95% confidence interval: 3.1–30.5) for primary school children. In terms of dietary assessments, the Kaplan-Meier plots for the age of introduction of solid foods were similar in the 2 countries; the introduction of egg, soybean, wheat, vegetables, fruits, and tree nuts was similar. However, with the introduction of peanut there was a significant difference between the 2 countries; by 9 months of age, 69% of Israelis were eating peanut, compared with only 10% of United Kingdom infants. The median monthly consumption of peanut in Israeli infants 8 to 14 months of age was 7.1 g of peanut protein and that in United Kingdom infants was 0 g (P < .001). Similar contents of major peanut allergens were demonstrated in products from the 2 countries, as well as similar levels of IgE binding between the products.

CONCLUSIONS. The prevalence of PA is 10-fold higher in Jewish children in the United Kingdom, compared with that seen in Jewish children in Israel. The differences cannot be explained by differences in age, gender, ancestry, atopy, or socioeconomic class. The most obvious difference in the diet of infants in the 2 populations occurs in the introduction of peanut. Israeli infants are introduced to peanut during early weaning and continue to eat peanut more frequently and in higher amounts than United Kingdom infants, who avoid peanut. It has been proposed that different methods of preparing peanut could be responsible for the different rates of PA in different countries, but commonly consumed peanut-containing foods in both countries are derived from roasted peanut butter, and equivalent amounts of total protein, major peanut allergen, and IgE binding were demonstrated among these foods.

REVIEWERS COMMENTS. This study demonstrated a strong inverse association between peanut consumption in infancy and the prevalence of PA in childhood. It is compelling that the early introduction of frequent and high doses of peanut protein in infants may lead to oral tolerance. Although there is inherent selection bias and recall bias with questionnaires in general, the authors of this study attempted to reduce both of these factors. Until recently, dietary avoidance of peanut during pregnancy, breastfeeding, and early childhood was recommended in the United States. This article prompts us to question our practices and recommendations in terms of introduction of peanut into our children’s diet and how it may affect their propensity to develop PA. An ongoing study, Learning Early About Peanut Allergy (LEAP), which is being conducted by the authors of this article, should provide much-needed evidence for guidelines on the introduction of peanut into the diet of infants and children.

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Dietary Advice, Dietary Adherence and the Acquisition of Tolerance in Egg-Allergic Children: A 5-yr Follow-up

PURPOSE OF THE STUDY. To assess sources of dietary advice, adherence to advice, factors that influence adherence, and impact of dietary adherence on acquisition of tolerance among egg-allergic children.

STUDY POPULATION. One hundred sixty-seven children diagnosed with immunoglobulin E–mediated egg allergy and followed by a tertiary pediatric allergy center in Australia.

METHODS. In 2006, a questionnaire was mailed to parents of egg-allergic children who were seen in the clinic in 2003. The questionnaire included demographic data, initial and subsequent reaction history, and information on self-injectable epinephrine prescriptions. Reaction severity was categorized as grade 1 (localized erythema/urticaria), 2 (generalized erythema/urticaria, angioedema, and/or gastrointestinal symptoms), or 3 (generalized urticaria and stridor, wheeze, or cardiovascular compromise). The questionnaire also assessed the type and source of dietary advice given, dietary adherence, characteristics that affect adherence, and acquisition of tolerance to egg. Adherence to dietary advice was defined as following given advice “all of the time.” Oral tolerance to egg was based on the results of an oral food challenge (OFC).

RESULTS. The mean age of the study population was 6.6 years (mean follow-up period: 5.5 years). Coexisting atopic disorders were prevalent, with 83% of children having other food allergies and 56% having asthma. Only 21% reported having a prescription for self-injectable epinephrine, 47% reported accidental exposures, and 39% reported subsequent clinical reactions to
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