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Peanut Allergy: An Epidemiologic Analysis of a Large Database

Leickly FE, Kloepfer KM, Slaven JE, Vitalpur G. *J Pediatr*. 2018;192:223-228.e1

PURPOSE OF THE STUDY. To further assess peanut allergy and the parental concerns that arise with the diagnosis.

STUDY POPULATION. This database was a compilation of data from 1070 children who presented to the clinics affiliated with the Indiana University School of Medicine with a peanut allergy or peanut sensitization from April 1, 2011, to March 31, 2016.

METHODS. The participants were recruited by the allergist during new evaluations or follow-up allergy visits. All families who came to the clinic with a peanut allergy concern were offered registry participation, and <1% of the eligible patients did not participate. The attending allergist took their history regarding a variety of food allergy questions for the registry, and then demographic data were verified with the families. Skin and blood testing results were included by the primary investigator.

RESULTS. Of the 1070 children, 713 had a peanut allergy, and 357 had peanut sensitization as defined by using history and testing. The mean age at the time of the first reaction was 2.06 years, and the median age was 1 year, with 87.6% having the first reaction before 3 years of age. Sixty-five percent of those in the registry reported atopic dermatitis, and 41% reported asthma. Two-thirds had additional food allergies, with egg being the most common, followed by milk. Approximately half of the 1070 children returned for a second visit, and 21.3% of the return-visit patients reported a subsequent reaction, with one-third of those reactions being anaphylaxis. Approximately one-third of these subsequent reactions were of greater severity than the first reaction, and it was more likely to be in patients whose initial reaction was a skin reaction. The study further revealed that skin prick testing wheal size was not correlated with allergic symptoms. Peanut-specific immunoglobulin E levels were significantly higher in children with anaphylaxis.

CONCLUSIONS. With this study, we agree with authors of previous reports that peanut allergy and/or sensitization is more common in male children, the median age of first reaction is 1 year, atopic dermatitis is a common comorbidity, and skin prick testing wheal size is not correlated with reaction type. A difference was noted in the registry, with a higher percentage of white patients having a peanut allergy, and the patients were less likely to be in a low-income household. Furthermore, a lower percentage of comorbidity

with asthma compared with atopic dermatitis was shown, and more severe reactions on second exposures occurred in only one-third of patients with subsequent reactions.

REVIEWER COMMENTS. This was a large registry database that was used to answer standard questions that are frequently raised by parents of patients with a food allergy. It was a thoroughly constructed registry with verification by a treating allergist. It is important to query registry data to monitor trends in disease state and predict population-based observations and possible treatment outcomes.

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Multicenter Prevalence of Anaphylaxis in Clinic-Based Oral Food Challenges

Akuete K, Guffey D, Israelsen RB, et al. *Ann Allergy Asthma Immunol*. 2017;119(4):339-348.e1

PURPOSE OF THE STUDY. Oral food challenges (OFCs) are the gold standard for the diagnosis of food allergy. Previous studies reveal that the rate of anaphylaxis for OFCs ranges from 6% to 33%. The purpose of this study was to review the epidemiology and rates of reaction from multiple food allergy centers in the United States to better understand the risks associated with OFCs.

STUDY POPULATION. Data were obtained from 2008 to 2013 from 5 US food allergy centers. A total of 6377 open OFCs were performed, a majority ($n = 5393$) being for patients <18 years old. The OFCs were all considered to be low risk because of the lack of recent reaction, history of tolerance to ingestion, or low levels of serum-specific immunoglobulin E. All centers challenged patients with and without positive skin prick test results.

METHODS. A medical record and literature review was performed, and a survey was completed by each institution, including reaction presentation and treatment provided, among other outcome parameters. A meta-analysis was performed on the pool of data.

RESULTS. The pooled estimate of allergic reactions for open OFCs was 14% (95% confidence interval, 13%-16%) and for anaphylaxis was 2% (95% confidence interval, 1%-3%). Of 3127 challenges, 451 required treatment (14.4%): antihistamines 76%, epinephrine 14%, and steroids 11%. The overall percentage of OFCs that received antihistamines was 10%, and the overall percentages receiving epinephrine and steroids were each 1%.

CONCLUSIONS. This study, which is the largest assessment of allergic reactions of OFCs in a nonresearch setting in the United States, concluded that OFCs are safe when performed in an allergy specialist's office.

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Lisa Forbes and Jennifer Miller

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