FOOD ALLERGY

PREDICTION OF TOLERANCE ON THE BASIS OF QUANTIFICATION OF EGG WHITE-SPECIFIC IgE ANTIBODIES IN CHILDREN WITH EGG ALLERGY


Purpose of the Study. Egg allergy is one of the most common food allergies in infants and young children. This study sought to determine the likelihood of outgrowing egg allergy in children younger than 2 years and to identify prognostic predictors of tolerance.

Study Population. Fifty-eight children under 2 years of age with egg allergy (mean age: 16 months; range: 11–24 months), including 50% with atopic dermatitis were investigated.

Methods. The children underwent prospective evaluation with skin prick testing, measurement of egg-immunoglobulin E (IgE), total serum IgE, and open oral egg challenges under physician supervision every 6 months. Kaplan-Meier survival curves were used to calculate cumulative tolerance probability and the Cox proportional regression model was used to estimate the relative prognostic importance of the predictor variables.

Results. The median time from the appearance of the first symptoms to tolerance was 35 months. Cumulative tolerance probability was 16% at 12 months of follow-up, 28% at 24 months, 52% at 36 months, 57% at 48 months, and 66% at 60 months. Extracutaneous symptoms and large egg prick (mean wheel size: >6 mm) skin test were independent predictors of persistent egg allergy, whereas in children with exclusive cutaneous symptoms egg white-IgE level over 1.9 kIU/L was associated with persistent allergy.

Conclusions. Half of the children younger than 2 years of age with egg allergy will tolerate the food at 35 months of follow-up, and this proportion could be 66% after 5 years of follow-up. The main predictors are the symptoms experienced after egg ingestion, followed by the size of skin prick test. In addition, the specific egg-IgE antibody level is an important prognostic marker in children who only had cutaneous symptoms.

Reviewer’s Comments. This study provides an insight into the natural history of egg allergy and identifies predictors of tolerance that is very important for counseling the patients and their families. Egg allergy appears to be more persistent than cow’s milk allergy because an estimated 75% of cow’s milk-allergic children achieve tolerance by 3 years of age. Children who experience only skin symptoms have a better prognosis than children with extracutaneous egg-induced anaphylaxis.

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NATURAL COURSE OF SENSITIZATION TO COW’S MILK AND HEN’S EGG IN CHILDHOOD ATOPIC DERMATITIS: THE ETAC STUDY GROUP


Purpose of the Study. To investigate the natural course of sensitization to egg and cow’s milk and its relationship to severity of atopic dermatitis (AD).

Study Population. Six hundred fifty-two (70.7%) of the 498 participants received 752 courses of oral antibiotics in their first year of life. These antibiotics were given for ear infections (62.1%), wheezing (21.4%), cough (10.9%), nasal congestion/discharge (3.9%), difficulty breathing (1%), and difficulty eating (0.7%). Ninety percent of the group were monitored up to age 5 years (n = 448). A subset of the group underwent an evaluation for total immunoglobulin E (IgE) at age 5 years. No significant association was found between the use of oral antibiotics in the first year of life and asthma, allergic rhinitis, or eczema at age 5 years. Among the 448 children, 90 had at least 1 allergic disorder at age 5 years. Within the group that developed these disorders, 30 (33.3%) received no antibiotic, 17 (18.9%) received 1 course, and 43 (47.8%) received 2 or more courses of antibiotics in the first year of life. Antibiotic use was significantly associated with transient wheezing; however, the association became weaker after adjustments for other variables. Transient wheezing was significantly associated with low household income. There was no association between antibiotic use in the first year of life and asthma in the persistent wheezing group. Persistent wheezing was more associated with male sex and a maternal history of asthma. A “reverse causation” was also looked into. When those children who were given antibiotics for wheezing were taken out of the analysis, there still was no association found. There was also no association in the late-onset wheezing group. Serum IgE levels were not different between those who had antibiotics and those who did not receive them in the first year of life.

Conclusions. In this prospective study of children from Boston, born to parents who had a history of allergy, there was no support for the theory that the use of antibiotics in early childhood is associated with the development of asthma or allergy at age 5 years.

Reviewer’s Comments. This is a negative study and frequently such studies only tell us what did not work. I do think that although this is a “negative” study, it is important, well-done, and makes a significant contribution. Recently, a hypothesis has been put forth that suggests that the increase in the prevalence of allergic diseases may be associated with reduced exposure to infections and perhaps the use or frequent use of antibiotics in young children. The implication was that an antibiotic permits the immature immune system to remain in the allergy favoring TH-2 mode. The authors of this article point out that antibiotic use in the first year of life does not seem to be associated with the subsequent development of asthma, allergic rhinitis, or eczema.

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Anna Nowak-Wegryzn
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