The Amount of Food-Specific IgE at Age 1 Year is Associated with the Risk of Asthma at Age 6 Years


Rationale: Sensitization to foods is known to be a predictor of asthma, and we wondered whether the degree of sensitization helps to further quantify the risk of subsequent asthma.

Methods: Food-specific IgE testing was completed at age 1 year for children enrolled in the Childhood Origins of ASThma (COAST) study. Peanut, egg and milk IgE were tested on 252, 256 and 252 children respectively using fluoroenzyme immunoassay (Unicap® 100). Specific IgE scores were classified as negative (<0.35), low (0.35-<0.7), moderate (0.7-3.5), and high (>3.5). Asthma was evaluated at age 6 years.

Results: The food allergy sensitization rate was similar among all cohorts (milk: 12%; egg: 17%; peanut: 11%). Egg-specific IgE was positively associated with asthma at age 6 years, and the risk was quantitative. Children with high egg-specific IgE had the greatest risk of developing asthma (82%), and this was significantly greater than asthma risk for children with no IgE (23%, p=0.0007), low IgE (38%, p=0.04), or moderate IgE (40%, p=0.03). Positive peanut and milk-specific IgE increased the risk of asthma at age 6 years (peanut: 60% that tested positive at age 1 year developed asthma at age 6 years; milk: 48%), but was not associated with the amount of specific IgE.

Conclusions: The amount of egg-specific IgE at age 1 year appears to be a good indicator of asthma risk in high-risk children. Positive peanut and milk-specific IgE levels are also associated with the onset of asthma by age 6 years, but not in a dose-related fashion.

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