Maternal Antenatal Peanut Consumption and Peanut and Rye Sensitization in the Offspring at Adolescence

Kemp AS, Ponsonby AL, Dwyer T, Cochrane JA, Pezic A, Jones G. *Clin Exp Allergy*. 2011;41(2):224–231

PURPOSE OF THE STUDY. To examine the influence of antenatal peanut ingestion on peanut and rye sensitization.

STUDY POPULATION. The 373 participants were drawn from a cohort of 1437 children born in Tasmania in 1988 and 1989, selected from all births for being at elevated risk of sudden infant death syndrome. Those who were not lost to follow-up and who subsequently agreed to participate at age 8 in studies on bone density, blood pressure, high-density lipoprotein cholesterol, and vitamin D and at age 16 in a study of bone health and allergy were included.

METHODS. The mothers completed a hospital interview shortly after delivery that included a food-frequency questionnaire of diet in the third trimester and family history of asthma. Those mothers who ingested peanut at least once per month were regarded as eating peanut. Peanut and rye sensitization at age 16 were determined by using the ImmunoCAP test (Phadia, Uppsala, Sweden). An allergen-specific immunoglobulin E (IgE) level of >0.35 kU of antibody (kU_A)/L was regarded as a positive result.

RESULTS. The peanut sensitization rate was 14%. In the entire cohort ($N = 310$), there was no association between antenatal peanut ingestion and peanut sensitization ($P = .17$). However, there was a strong association between antenatal peanut ingestion and decreased risk of rye sensitization and peanut sensitization in those ($n = 201$) without a family history of asthma (rye odds ratio [OR]: 0.30 [95% confidence interval (CI): 0.14–0.63], $P = .001$; peanut OR: 0.18 [95% CI: 0.04–0.78], $P = .02$). There was an increased risk of rye sensitization in those ($n = 108$) with a family history of asthma and antenatal peanut ingestion (rye OR: 2.69 [95% CI: 1.11–6.51], $P = .03$). It was considered that these sensitizations were likely to be related to the presence of IgE antibodies to cross-reacting carbohydrate epitopes common to rye and peanut allergens, which are not the epitopes thought to typically contribute to clinical disease.

CONCLUSIONS. Antenatal peanut ingestion might influence the development of IgE antibody to cross-reacting carbohydrate epitopes in later life, and avoidance might inadvertently increase sensitization in some people. Genetic factors might modify this association.

REVIEWER COMMENTS. This study is the first to obtain prospective data on antenatal peanut consumption in a population-based cohort rather than one with a family history of allergy. Selection bias is likely to have been limited, because the subjects were initially recruited for a study of nonatopic conditions, but there was a substantial loss to follow-up that might have introduced unrecognized bias. The fact that the results were not significant overall, but were significant and meaningful when considered according to family history of asthma, adds to the evidence that the relationship between sensitization and disease, and antenatal and early life exposure to allergens, is complex and depends on multiple factors.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2011–2107Z

Lara S. Ford, MD, MPH
Scott H. Sicherer, MD
New York, NY

Oral Food Challenges in Children With a Diagnosis of Food Allergy

Fleischer DM, Bock SA, Spears GC, et al. *J Pediatr*. 2011;158(4):578–583

PURPOSE OF THE STUDY. To assess the outcome of oral food challenges (OFCs) in a pediatric patient population placed on elimination diets often based solely on the results of food-specific immunoassays (specific immunoglobulin E [IgE] testing).

STUDY POPULATION. Included was a pediatric population of 125 children (median age: 4 years) with active atopic dermatitis (AD) and food avoidance evaluated at National Jewish Health (Denver, CO).

METHODS. This was a retrospective chart review of patients who underwent at least 1 OFC to evaluate for an IgE-mediated reaction. OFCs were conducted after reviewing clinical history, skin-prick-test (SPT) results, and serum allergen-specific IgE test results. If there was a history of a convincing reaction within the previous 6 to 12 months or if a reaction was life-threatening, then an OFC was not performed.

RESULTS. Ninety-six percent of the patients evaluated had AD, and OFCs were only undertaken once appropriate AD treatment had been started. Of the 364 OFCs performed on avoided foods, results were negative for 325 (89%). Of the 122 foods that were being avoided because of previous adverse reactions, 102 (84%) had a negative OFC result. Of the 111 foods being avoided because of immunoassay or skin-prick testing results, 103 (93%) had a negative OFC result. For foods without established decision points (ie, foods other than milk, egg, and peanut), there was a wide range of immunoassay results, and 93% had negative OFC results. Many foods were being avoided for reasons other than serum test results or a history linking the food to an observed reaction, and of those 131 OFCs, results were positive for only 11 of them.

CONCLUSIONS. Using serum food-specific IgE testing alone to diagnose food allergy, especially for children with AD,

Maternal Antenatal Peanut Consumption and Peanut and Rye Sensitization in the Offspring at Adolescence

Lara S. Ford and Scott H. Sicherer

Pediatrics 2011;128;S108
DOI: 10.1542/peds.2011-2107Z

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Maternal Antenatal Peanut Consumption and Peanut and Rye Sensitization in the Offspring at Adolescence

Lara S. Ford and Scott H. Sicherer

Pediatrics 2011;128;S108
DOI: 10.1542/peds.2011-2107Z