Allergy

PREDICTION, PREVENTION, AND THE “HYGIENE HYPOTHESIS”

Age at First Introduction of Cow Milk Products and Other Food Products in Relation to Infant Atopic Manifestations in the First 2 Years of Life: The KOALA Birth Cohort Study

Snijders BE, Thijs C, van Ree R, van den Brandt PA. Pediatrics. 2008;122(1). Available at: www.pediatrics.org/cgi/content/full/122/2/e115

PURPOSE OF THE STUDY. To evaluate any associations between the introduction of cow’s milk products/other solid food products and infant atopic manifestations in the second year of life.

STUDY POPULATION. Mother-infant pairs previously enrolled in the ongoing prospective KOALA Birth Cohort Study to study the cause of allergic disease. A total of 2834 pregnant women were recruited at 34 weeks of gestation. Data from 2558 infants in the Netherlands were analyzed.

METHODS. Data on introduction of cow’s milk products and other food products, eczema, recurrent wheeze, allergies, and confounders were collected with repeated questionnaires at 34 weeks of gestation and 3, 7, 12, and 24 months after delivery. Allergen-specific immunoglobulin E was assessed from serum obtained from children at age 2 years. Analyses were performed through multivariate logistic regression. Reverse causation was addressed by performing risk-period-specific analyses that excluded infants with early symptoms of eczema or wheeze.

RESULTS. More delay (e.g., >7 months of age) in introduction of cow’s milk products was associated with a higher risk for eczema. In addition, delayed introduction of other food products was associated with an increased risk for atopy development at the age of 2 years. Exclusion of infants with early symptoms of eczema and recurrent wheeze (to avoid reverse causation) did not essentially change the results.

CONCLUSIONS. Delaying the introduction of cow’s milk products or other food products may not be favorable for preventing the development of atopy.

REVIEWERS’ COMMENTS. In giving advice to “allergic families,” we used to think that it was a good idea to keep children clean, away from pets, and to delay the introduction of “highly allergenic” foods such as cow’s milk. Were we wrong on all counts? There are many confounders when evaluating the relationship between early introduction of food products to infants and later development of atopy. The authors of this article used several statistical approaches to account for the main confounders, including breastfeeding, family history, and, importantly, reverse causation. Although it is difficult to absolutely exclude reverse causation, this authors suggested that delayed introduction of milk was associated with increased eczema. Because of studies such as this one, the focus has shifted away from the delayed introduction of cow’s milk protein and other food products as a means to decrease the risk of developing atopy. These findings provide a rationale for conducting interventional studies to determine whether early introduction of milk and other foods will actually help to prevent food allergies.

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Antibiotic Use in the First Year of Life and Risk of Atopic Disease in Early Childhood


PURPOSE OF THE STUDY. To investigate an association with antibiotic use in the first year of life and subsequent development of atopic disease in the first 5 years of life.

STUDY POPULATION. A prospective birth cohort of 198 children considered to be at high atopic risk was recruited prenatally and monitored for 5 years. Risk was based on ≥1 parent with a doctor’s diagnosis of asthma, hay fever, or eczema.

METHODS. Parents kept a daily diary of their child’s symptoms, including history of respiratory illnesses, and antibiotic use. The study physician evaluated children at regular intervals for the presence of eczema, and annual interviews took place, during which parents reported a diagnosis of asthma or wheezing. At 5 years of age, all children underwent skin-prick testing and gave serum samples for measurement of total immunoglobulin E. To determine the effect of antibiotic use on future atopic disease, a logistic regression model was used with propensity score adjustment, with adjustments for a calculated antibiotic predictor score, number of doctor visits, gender, child care, and pets.

RESULTS. Fifty-four percent of the children (107 of 198 children) received ≥1 course of antibiotics in the first year of life. Acute respiratory illness, and in particular lower respiratory illness, was the most common reason for use of antibiotics. Children who received antibiotics for wheezing lower respiratory illness between 7 and 12 months were more likely to be diagnosed with asthma (odds ratio [OR]: 3.1 [95% confidence interval (CI): 1.2–7.3]; P < .05). Asthma in general was associated with antibiotic use (unadjusted OR: 2.3 [95% CI: 1.2–7.3]).
CONCLUSIONS. In a cohort of children at high risk, there were no associations of antibiotic use in the first year of life with later development of atopic disease.

REVIEWERS COMMENTS. As the interest of the general public in an anthroposophic lifestyle increases, providers continue to have a responsibility to provide optimal care, which includes prescribing antibiotics when they are clinically indicated in the interest of preserving the greater health of the child. Despite a small sample size and lack of randomization, this study reinforces that early antibiotic use is not associated with increased development of atopy. However, children with atopy, particularly asthma, may be more likely to receive antibiotics in the first year of life.
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