Children who are directly breastfed for the first 3 months of life may have a decreased risk of eczema and/or skin allergy compared with children who drink breast milk both from a bottle and from the breast and are supplemented with formula.

REVIEWER COMMENTS. Breastfeeding is thought to provide better protection against allergic disease than formula feeding. However, there are several studies with inconclusive or conflicting results. In this study, the authors postulate that the inconsistencies are because the patterns of breastfeeding versus formula feeding are much more diversified. They suggest that pumped breast milk components may be altered in the freezing and reheating process, resulting in a loss of immunoglobulins and a reduction in lipase. The expression of milk may also introduce skin microorganisms into the milk. This large birth cohort study is 1 of few studies in which the trajectory of infant feeding with its relationship to the development of eczema and/or skin allergy in children is managed. These findings reveal the possible benefit of direct breastfeeding in the first 3 months of life in decreasing eczema and skin allergy. Although most pediatricians would argue that “breast is best,” how it is presented and whether it is with or without supplemental formula may affect the immune system in the gut and influence the development of eczema.

Early Probiotic Supplementation for Eczema and Asthma Prevention: A Randomized Controlled Trial


PURPOSE OF THE STUDY. To ascertain if probiotics administered during the first 6 months of life decreases the rate of childhood asthma and eczema.

STUDY POPULATION. The study included a population of newborns who had at least 1 parent with a history of asthma.

METHODS. This was a randomized, double-blind, controlled trial with 2 arms, each receiving a daily capsule for the first 6 months of life; the intervention group received 1 billion colony-forming units of Lactobacillus rhamnosus GG (LGG) and 225 mg of inulin, and the control group received 325 mg of inulin. Physical assessments occurred at 1, 3, 6, 12, and 24 months of age. Telephone follow-up occurred monthly during the first year and then occurred semiannually.

RESULTS. A total of 184 infants were randomly assigned and initiated treatment. Subjects were enrolled over a 6-year period and were managed for a median of 4.6 years. The cumulative incidence of eczema at age 2 was no different between groups (30.9% in the control and 28.7% in the LGG arm for a hazard ratio of 0.95; log-rank P = .83). The cumulative incidence of asthma at 5 years of age was 17.4% in the control arm and 9.7% in the LGG arm (mean hazard ratio over 5 years of follow-up was 0.88; log-rank P = .25).

CONCLUSIONS. The study, which encompasses infants with high breastfeeding and low cesarean delivery rates, revealed a lack of effect of early-life LGG probiotic supplementation for the prevention of asthma and eczema for infants with parental asthma.

REVIEWER COMMENTS. The use of early probiotic supplementation as a prevention measure for allergic disorders has not been demonstrated. Studies in which authors investigate the effects of probiotic supplementation have varied in terms of probiotic strains and doses, duration of treatment, and when treatment is started (prenatal, postnatal), all of which can potentially impact the effect of the intervention.
current wheeze, asthma, rhinitis, and/or eczema. The χ² test was used to test the differences in characteristics between the antibiotic and nonantibiotic groups.

RESULTS. Of the 1323 responses received at 2 years of age, 436 (48.3%) children had received antibiotics. Cephem was prescribed in 194 (21.5%) children making it the most common antibiotic prescribed in this group, followed by a macrolide in 173 (19.2%) children. When comparing the 2 groups at 2 years of age, children given antibiotics were statistically more likely to attend daycare (24.8% vs 16.3%; P = .002) and have had bronchitis (22.9% vs 10.1%; P < .001). At 5 years of age, children exposed to antibiotics in the first 2 years of life had an adjusted odds ratio (aOR) of 1.40 (95% confidence interval [CI] 1.01–1.94) for current atopic dermatitis, an aOR of 1.65 (95% CI 1.05–2.58) for current allergic rhinitis, and an aOR of 1.72 (95% CI 1.10–2.70) for current asthma. Looking at the 2 most commonly prescribed antibiotics, cephem was associated with current asthma (aOR 1.97; 95% CI 1.23–3.16) and existing rhinitis (aOR 1.82; 95% CI 1.12–2.93). With regard to macrolide use and current atopic dermatitis, the aOR was found to be 1.58 (95% CI 1.07–2.33).

CONCLUSIONS. Children who had received antibiotics by 2 years of age were more likely to have asthma, atopic dermatitis, or allergic rhinitis by 5 years of age. These findings imply an association between the use of antibiotics, specifically cephem, and the risk of development of asthma and allergic rhinitis, and macrolide with risk of development of atopic dermatitis.

REVIEWER COMMENTS. Health care professionals are often faced with efforts to avoid microbial resistance by prescribing fewer antibiotics. This plight is often met with opposition from patients and their families. The authors of this study provide another factor when weighing the risks and benefits of use of antibiotics in the pediatric population. Although there are instances when an antibiotic cannot be avoided, the authors add useful information that we can provide to educate our families regarding the need for appropriate antibiotic use and possible prevention of allergic disease development.

Skin Prick Tests and Specific IgE in 10-Year-Old Children: Agreement and Association With Allergic Diseases

PURPOSE OF THE STUDY. To assess the agreement between skin prick testing (SPT) and specific immunoglobulin E (sIgE) and to correlate their association with childhood allergic diseases.

STUDY POPULATION. A total of 529 children from a prospective birth cohort of children living in rural Europe underwent both SPT and sIgE testing at 10 years of age. Those with severe acute symptoms of asthma or rhinoconjunctivitis, eczema at SPT test site, or severe peanut allergy were excluded.

METHODS. SPT and sIgE testing were evaluated for 8 allergens, including dust mite (*Dermatophagoides pteronyssinus* and *D fariinae*), cat, dog, birch, grass, *Alternaria*, and peanut. Agreement between several cutoff values for sIgE (0.35, 0.7, 3.5, and 7 IU/mL) and SPT (0, 3, and 5 mm) testing were assessed by using Cohen’s κ (κ) coefficient. Correlation between test results and presence of food allergy, atopic dermatitis, asthma, or hay fever and having at least 1 allergic disease was also evaluated by using the McNemar test.

RESULTS. For perennial allergens, the highest correlation with a k value of 0.5 occurred by using a cutoff of 5 mm for SPT and 3.5 IU/mL for sIgE testing. For seasonal allergens, the highest κ value was 0.47 with a cutoff of 3 mm for SPT and 0.7 or 3.5 IU/mL for sIgE testing. When evaluating specific allergens, the correlation between sIgE and SPT testing for foods was particularly low, with κ values <0.23. Correlation was highest for house dust mite, with a κ coefficient of 0.65. SPT testing had higher specificity for all allergic diseases examined (all P values <.001). sIgE testing had higher sensitivity for those with at least 1 allergic disease and atopic dermatitis (P < .016) but not for those with asthma or hay fever. The combined result of using both tests was more sensitive (P < .05) but less specific (P < .0001) for all categories of allergic disease. By using SPT testing ≥3 mm and/or sIgE testing ≥0.35 IU/mL as markers of atopic sensitization, 20.2% of sensitized patients would have been missed by SPT testing alone, and 38.9% of sensitized patients would have been missed by sIgE testing alone.

CONCLUSIONS. There is moderate agreement between sIgE and SPT testing. In general, SPT testing ≥3 mm was more specific than sIgE testing ≥0.35 IU/mL but less sensitive for those with at least 1 allergic disease. Patients with atopic sensitization may be missed if only 1 method of testing is used; however, this is at the expense of lower specificities.

REVIEWER COMMENTS. In this study, researchers use a large multicenter birth cohort to assess the agreement between SPT and sIgE testing in children. Although many use SPT and sIgE testing interchangeably, results from these 2 testing methods may differ significantly. Using only 1 testing method may miss atopic sensitizations. However, low specificity of sIgE in all categories, especially with
Influence of Antibiotic Use in Early Childhood on Asthma and Allergic Diseases at Age 5
Grace T. Padron and Vivian P. Hernandez-Trujillo

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