an assessment of AE on the basis of the scoring atopic dermatitis (SCORAD) index. Data analysis (univariate and multivariate) was performed to evaluate the effects of “modifiable” and “nonmodifiable” exposures on development of AE.

RESULTS. At the 12-month follow-up, 1326 (67%) of the children remained in the cohort, of which 207 (15.6%) were determined to have AE. There were several modifiable factors found to be significant in univariate and/or multivariate analysis. Ownership of livestock and exclusive breastfeeding for at least 4 months were protective. Exposure to any infant formula (cow’s milk formula specifically), eggs, or fish in the first year of life, parental smoking, and cat ownership were associated with increased AE. There were also several significant nonmodifiable exposures. Residing in an agricultural region and birth in the spring as compared with the winter were protective. Maternal or paternal history of atopy, high paternal education, and residence in a rural region or in a “town” as compared with a “village” were associated with increased AE. The impact of modifiable versus nonmodifiable exposures on outcome was evaluated by calculating a percent total regression score. Using this method, modifiable exposures were found to contribute just over one third (38%) to the total regression score, whereas nonmodifiable exposures contributed just under two thirds (62%).

CONCLUSIONS. Although nonmodifiable exposures seem to have greater overall impact on development of AE, modifiable exposures seem to contribute significantly as well. Among these, infant feeding practices (including breastfeeding and exposure to cow’s milk, egg, and fish) in the first year of life are the biggest factors.

REVIEWER COMMENTS. The finding that breastfeeding is protective against developing AE is consistent with multiple previous studies, although there are also quite a few studies that have found no effect. This effect is seen primarily in children with a family history of atopy. There are also other data that support the concept of early sensitization to certain foods, including cow’s milk, eggs, and fish, increasing the risk for AE. Cat ownership has frequently been noted to be a risk factor, whereas living environments that result in exposure to livestock have been protective. This study adds to the data suggesting that among infants at high risk of developing AE, there are some exposure factors that may be modified to lessen the likelihood of developing AE. Because infantile AE is associated with the development of asthma later, one may presume that preventing AE could decrease the odds of developing asthma as well.

Does Antibiotic Exposure During Infancy Lead to Development of Asthma? A Systemic Review and Metaanalysis

PURPOSE OF THE STUDY. To determine the association between antibiotic exposure in the first year of life and the development of childhood asthma by conducting a meta-analysis.

METHODS. A search of all available electronic databases (Medline, Embase, EBM databases, Web of Science, PapersFirst, ProceedingsFirst, and the Cochrane database) for the period between January 1966 and September 2004 was performed. Studies included populations receiving at least 1 prescription for an antibiotic during the first year of life. The primary outcome was the development of physician-diagnosed asthma between the ages of 1 and 18 years. Only studies published in English and those that reported odds ratios (ORs) were included.

RESULTS. Review of 2042 references yielded 8 studies that met criteria: 4 were retrospective, and 4 were prospective. The studies were reported between 1999 and 2004 and included sample sizes between 263 and 21 129 children. All retrospective studies used questions from the International Study of Asthma and Allergies in Childhood survey. Five studies were used to determine if there was a dose-response relationship between the number of antibiotic courses received and the risk of childhood asthma. These 5 studies included 27 167 children and 3392 asthma cases. The pooled OR for the 8 studies was 2.05 (95% confidence interval [CI]: 1.41–2.99). The association between antibiotic use in the first year of life and asthma was significantly higher in the retrospective studies (OR: 2.82; 95% CI: 2.07–3.85) than in the prospective studies (OR: 1.12; 95% CI: 0.88–1.42). The overall OR for the dose-response association of antibiotic use in the first year of life and asthma was 1.16 (95% CI: 1.05–1.28), but there was a trend toward a stronger association in the retrospective studies than in the prospective studies.

CONCLUSIONS. Meta-analysis of the impact of antibiotics in the first year of life revealed a possible increase in later development of asthma in childhood on the basis of only the retrospective study results. Additional study is needed to determine a causal relationship.

REVIEWER COMMENTS. This meta-analysis was the first to address the question of whether antibiotic use in the first year of life is associated with subsequent development of asthma. On the basis of the analysis, exposure to at least 1 antibiotic in the first year of life seems to be a risk factor for the development of childhood asthma; however, when the analysis was stratified by the subtypes of studies (prospective versus retrospective), only the
pooled results from the retrospective studies yielded a positive association. All of the 95% CIs for the prospective studies crossed 1.00, which brings into question the association between exposure to antibiotics in the first year of life and the subsequent development of childhood asthma. Additional large-scale, prospective studies will be needed to confirm or refute the association.

Effect of Albendazole Treatments on the Prevalence of Atopy in Children Living in Communities Endemic for Geohelminth Parasites: A Cluster-Randomized Trial


PURPOSE OF THE STUDY. To determine if repeated antihelminthic treatments with albendazole affect the prevalence of atopy and clinical indices of allergy among children who live in parasite-endemic communities.

STUDY POPULATION. Children (N = 2373) attending the second to seventh year of primary education at 1 of 68 rural schools in a tropical and subtropical region of Ecuador.

METHODS. Children were cluster randomized by school to receive albendazole treatment every 2 months for 12 months or no treatment. The primary outcome was the proportion of children with at least 1 positive skin-test result to an environmental allergen after 12 months; secondary outcomes included the proportion of children with reported allergy symptoms, flexural dermatitis, and exercise-induced bronchospasm. No placebo was used, but the investigators who evaluated the children were blinded to their treatment-group assignment.

RESULTS. At baseline, there was an inverse association between geohelminth infection and skin-test reactivity (odds ratio: 0.78; 95% confidence interval: 0.65–0.95). Of children who received albendazole-allocated schools, 91.5% received all 7 albendazole doses; albendazole treatment by parents was reported for 29.4% of the children allocated to no-treatment schools. After 12 months, the prevalence of atopy did not increase among school-aged children who were treated with albendazole, compared with children who were not treated.

Effect of Probiotic Supplementation for the First 6 Months of Life on Allergen- and Vaccine-Specific Immune Responses


PURPOSE OF THE STUDY. To determine if probiotic dietary supplementation in the first 6 months of life could modify allergen- and vaccine-specific immune responses.

STUDY POPULATION. One hundred seventy-eight term infants born to women with a history of allergic disease and a positive prick-skin test result were enrolled in Australia between July 2002 and March 2005.

METHODS. In a randomized double-blind, placebo-controlled design, 3 × 10⁹ colony-forming units of Lactobacillus acidophilus (LARVI-A1; Probiomics, Eveleigh, New South Wales, Australia) was administered daily to term infants for the first 6 months of life. Peripheral blood mononuclear cell cytokine responses to tetanus toxoid (TT), house dust mite (HDM), ovalbumin, β-lactoglobulin, Staphylococcus enterotoxin B, and phytohemagglutinin were measured at 6 months of age.

RESULTS. Of the 178 infants who completed the study, blood samples were available from 118 children (60 placebo treated, 58 probiotic treated). Infants treated with probiotics had significantly lower interleukin 10 (IL-10) production to TT vaccine antigen than those in the placebo group (P = .03). Infants treated with probiotics had no significant differences in the levels of T-helper 1 and T-helper 2 cell responses to foods (ovalbu-
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