sensitive molecular methods for virus detection, and the results suggest that bacteria might contribute to wheezing episodes in children at high risk. Intervenational strategies geared toward these microorganisms might be useful to further our understanding of wheezing and asthma development in these children. Given the paucity of information on evidence-based strategies in young children for treating wheezing episodes, clinical trials for evaluating antimicrobial agents and other interventions for wheezing episodes should be considered and are currently being evaluated among large clinical trial networks.

Causal Direction Between Respiratory Syncytial Virus Bronchiolitis and Asthma Studied in Monozygotic Twins


PURPOSE OF THE STUDY. To compare the long-term outcome of asthma, allergy, and pulmonary function in monozygotic twin pairs discordant for severe respiratory syncytial virus (RSV) disease.

STUDY POPULATION. There were 37 monozygotic twin pairs discordant for RSV hospitalization at a mean age of 10.6 months evaluated in the study. The twins were born between January 1, 1994, and December 31, 2003, and enrolled through the Danish Twin Registry.

METHODS. Hospitalization was used as a marker of disease severity. Participants were studied at a mean age of 7.6 years. The study included clinical examinations, lung function testing, fractional exhaled nitric-oxide levels, determination of an asthma diagnosis, use of asthma medication, and results of skin-prick tests to common inhalant allergens.

RESULTS. The prevalence of asthma among the twins was 18%. The twins did not differ with respect to current asthma, use of inhaled corticosteroids or β₂ agonists, atopic dermatitis, fractional exhaled nitric oxide, baseline lung function, bronchial responsiveness, or sensitization (P > .1 for all comparisons).

CONCLUSIONS. There was no significant difference within cohabiting monozygotic twin pairs discordant for hospitalization for RSV bronchiolitis in infancy on the development of asthma and allergy, which argues against a specific viral effect.

REVIEWER COMMENTS. This study examined the question of which came first: not the chicken or the egg but whether severe RSV bronchiolitis causes wheezing or whether someone with a predisposition to asthma suffers a more severe response to RSV. This study’s results argue against a specific effect of severe RSV infection in the development of asthma and allergy. Another recent study report based on 8280 twin pairs showed that a model in which asthma “causes” RSV hospitalization fit significantly better than a model in which RSV hospitalization “causes” asthma. We guess the chicken came first.
of allergic sensitization and, therefore, an increased risk of developing future asthma.

REVIEWER COMMENTS. A limitation of this study lies in the fact that all subjects were hospitalized for their wheezing, thereby representing a minority of children with rhinovirus infection. Nevertheless, when considering the asthma predictive index, the evidence presented from this study suggests that a history of rhinovirus infection, especially severe infection, could be considered an additional risk factor for the development of asthma.

Association of Childhood Obesity With Atopic and Nonatopic Asthma: Results From the National Health and Nutrition Examination Survey 1999–2006

PURPOSE OF THE STUDY. Previous work has suggested that obesity is related to asthma through an allergic inflammation pathway. These researchers sought to examine the role of C-reactive protein (CRP) in the association between obesity and asthma among a nationally representative sample of US children and young adults.

STUDY POPULATION. The sample came from the 1999–2006 National Health and Nutrition Examination Survey (NHANES) and specifically included children aged 2 to 19 who had information on BMI and asthma status (N = 16,074).

METHODS. Atopy was measured by using allergen-specific serum immunoglobulin E; asthma status was measured through self-report of diagnosis by a physician; and BMI was calculated on the basis of height and weight measurements. Multiple logistic regression analysis was used to examine the association between BMI and asthma status.

RESULTS. Nearly 10% of the children reported current asthma. A higher proportion of atopic compared with nonatopic children reported current asthma (15.8% vs 6.4%; odds ratio [OR]: 2.71 [95% confidence interval (CI): 1.98–3.72]). There was a strong relationship between BMI and CRP levels (r = 0.41). Obese children had a 1.68 odds (95% CI: 1.33–2.12) of having current asthma. Among nonatopic children, those in the obese category were more than twice as likely to have current asthma (OR: 2.46 [95% CI: 1.21–5.02]); however, there was no association between overweight or obesity and asthma among atopic children. Increased CRP levels were associated with an increased odds of having asthma among nonatopic children (OR: 1.45 [95% CI: 1.16–1.81]) but not among atopic children (OR: 0.97 [95% CI: 0.65–1.44]).

CONCLUSIONS. The association of overweight and obesity with asthma was stronger among nonatopic children. Overweight might lead to systematic inflammation that, in turn, leads to an increased risk of asthma in nonatopic people.

REVIEWER COMMENTS. There is growing evidence that the rise in both obesity and asthma might be related. This study was cross-sectional and limits our understanding of the causal relationship between obesity and asthma. However, it contributes to advancing the evidence in this area by examining the mechanisms through which obesity and asthma might be related—in this case, through nonallergic disease. Future studies can build on these findings by examining these associations prospectively.

Risk of Asthma in Young Adults Who Were Born Preterm: A Swedish National Cohort Study

PURPOSE OF THE STUDY. To evaluate whether those who were born prematurely were more likely to be prescribed asthma medications in young adulthood than those who were born at term.

STUDY POPULATION. This was a national cohort study of all singleton infants born in Sweden from 1973 through 1979 (N = 622,616) and followed to ages 25.5 to 35.0 to determine whether asthma medications were prescribed in 2005–2007.

METHODS. Asthma-medication data were obtained from all outpatient and inpatient pharmacies throughout Sweden. Outcome was defined as prescription of (1) both a β2 agonist inhalant and a glucocorticoid inhalant or (2) a combination inhalant containing a β2 agonist and other drugs for obstructive airway diseases.

RESULTS. Young adults who were born extremely prematurely (23–27 weeks’ gestation) were 2.4 times more likely to be prescribed asthma medications than those who were born at term (95% confidence interval: 1.41–4.06). No association was found between later prematurity (28–32 or 33–36 weeks’ gestation) and asthma medications in young adulthood.
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