STUDY POPULATION. Children aged 6 to 7 years who were living in 3 cities (Bilbao, San Sebastian, and La Coruna) and 1 province (Asturias) of the North Atlantic coast of Spain.

METHODS. The International Study of Asthma and Allergies in Childhood (ISAAC) core and environmental questionnaires were used in 4 different centers of the Spanish North Atlantic coast. Bilbao, San Sebastian, and Asturias have a universal BCG immunization policy during the first days of life, whereas La Coruna discontinued this practice in 1989. Except for this center, immunization coverage was >90%. Parents of children aged 6 and 7 years were surveyed from a random sample of schools of Asturias or all schools in the city district among the remainder of the centers.

RESULTS. The participation rate was >70%. After excluding those children born outside Spain, there were 6762 immunized and 2828 nonimmunized. After adjusting for gender, age, smoking habits of the father and mother, truck traffic near the household, presence of older and younger siblings, and ownership of a cat or a dog during the first year of the child’s life, the adjusted odds ratios of the BCG-immunized children according to disease outcome were 0.87 for asthma (95% confidence interval [CI]: 0.76–1.00), 0.87 for hay fever (95% CI: 0.75–1.01), and 0.89 for atopic dermatitis (95% CI: 0.76–1.05).

CONCLUSIONS. BCG immunization offers weak protection against atopic diseases in Spanish schoolchildren.

REVIEWER COMMENTS. BCG vaccination has received attention because of its ability to provoke a T-helper (Th)1 response. Many investigators have hypothesized that vaccination with BCG may offer protection from Th2-skewed diseases such as asthma, allergic rhinitis, and atopic dermatitis. Although this study reveals that immunization with BCG offers weak protection against asthma and allergic rhinitis in a homogeneous population, it is important to remember that these diseases are multifactorial, with genetic and environmental influences also impacting pathogenesis.

Hospitalization for RSV Bronchiolitis Before 12 Months of Age and Subsequent Asthma, Atopy and Wheeze: A Longitudinal Birth Cohort Study


PURPOSE OF THE STUDY. To compare asthma and atopy outcomes of children according to whether they had been admitted to a hospital in the first 12 months with respiratory syncytial virus (RSV)–proven bronchiolitis.

STUDY POPULATION. Data from a large, population-based, birth cohort (Avon Longitudinal Study of Parents and Children) were used.

METHODS. Outcomes considered were 12-month prevalence of wheeze at 2 ages (between 30–42 and 69–81 months), cumulative prevalence of doctor-diagnosed asthma at 91 months, and skin-prick test–defined atopy at 7 years. Multivariable logistic-regression models were used to calculate odds ratios for outcomes adjusted for potential confounders.

RESULTS. A total of 150 infants (1.1% of the cohort) were admitted to a hospital within 12 months of birth with RSV bronchiolitis. The prevalence of wheezing was 28.1% in the RSV group and 13.1% in controls at 30 to 42 months and 22.6% vs 9.6% at 69 to 81 months. The cumulative prevalence of asthma was 38.4% in the RSV group and 20.1% in the controls at 91 months. Atopy was found in 14.6% of those in the RSV group and in 20.7% of the controls at 7 years. RSV bronchiolitis was associated with subsequent wheezing between 30 to 42 months (odds ratio [OR]: 2.3; 95% confidence interval [CI]: 1.3–3.9) and 69 to 81 months (OR: 3.5; 95% CI: 1.8–6.6) and with the cumulative prevalence of asthma at 91 months (OR: 2.5; 95% CI: 1.4–4.3) but not with atopy (OR: 0.7; 95% CI: 0.2–1.7).

CONCLUSIONS. In a population-based birth cohort, RSV bronchiolitis was associated with subsequent wheezing and asthma but not with the development of atopy by 7 years of age.

REVIEWER COMMENTS. Because infants who have severe RSV infection have recurrent wheezing later in life, RSV has been suggested to be a risk factor for asthma. Some also postulate that early RSV infection may predispose children to atopy; however, this has been controversial. Henderson et al show in their large prospective cohort that severe RSV infection requiring hospitalization is associated with wheezing but not atopy. These results indicate that RSV infection may be a risk factor for nonallergic asthma.

Early Respiratory Infections, Asthma, and Allergy: 10-Year Follow-up of the Oslo Birth Cohort


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