Methods. Vaccination status of patients was obtained from data collected by the Vaccine Safety Datalink created by the National Immunization Program of the Centers for Disease Control and Prevention (CDC). Asthma cases, defined by criteria discussed in the article, were identified using computerized medical encounter forms and pharmacy databases. To differentiate between asthma and bronchiolitis, a child had to have at least 1 asthma diagnosis or medication after age one. Proportional hazards regression analyses were conducted to estimate relative risks of developing asthma according to vaccination status.

Results. A total of 18,407 children (11%) developed asthma, with a median age at onset of 11 months. The relative risks of asthma were the following: 0.92 for diphtheria, tetanus, and pertussis (DTP) vaccine; 1.09 for oral poliovirus vaccine (OPV); 0.97 for measles-mumps-rubella (MMR) vaccine; 1.18 for Haemophilus influenzae type b (Hib) vaccine; and 1.20 for hepatitis B vaccine (HBV). The Hib result was not consistent across health maintenance organizations. In a subanalysis restricted to children who had at least 2 medical encounters during their first year of life, the relative risks decreased to 1.07 for Hib and 1.09 for HBV.

Conclusions. There is no association between the DTP, OPV, or MMR vaccines and the risk of asthma. The weak associations for Hib and hepatitis B vaccines seem to be at least partially accounted for by health care utilization or information bias.

Reviewers’ Comments. Concerns regarding vaccine side effects and relative risks of illnesses from vaccinations are an important issue for parents, as demonstrated by the long debate about MMR and autism. As always, it is important to regard these results within the context of the article. Although the study found a small increased risk of asthma with Hib and hepatitis B vaccines, the authors state that there were potential limitations of their study including confounding factors, possible misclassification of asthma status, and relative short follow-up that may have led to an overestimate of these risks.

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TRENDS IN CHILDHOOD ASTHMA: PREVALENCE, HEALTH CARE UTILIZATION, AND MORTALITY


Purpose of the Study. The burden of asthma is larger for pediatric patients than for the rest of the population. The study objective was to assess changes in the burden of asthma among US children by providing a comprehensive description of trends in childhood asthma prevalence, health care utilization, and mortality using national data.

Study Population. Data from the National Center for Health Statistics included children with asthma 0 to 17 years old from 1980 to the most recent year data were available.

Methods. Asthma demographic data from the National Health Interview Survey (NHIS), the National Ambulatory Medical Care Survey, the National Hospital Ambulatory Medical Care Survey, the National Hospital Discharge Survey, and the Mortality Component of the National Vital Statistics Survey were used to describe trends in childhood asthma. Children were stratified by age group (0–4 years, 5–10 years, and 11–17 years) and by race/ethnicity when possible.

Results. Childhood asthma prevalence increased from 3.6% to 6.2% (average increase of 4.3% per year) from 1980–1996. A peak prevalence of 7.5% occurred in 1995. The largest increase in prevalence (and associated greater health care use) was in the 0 to 4-year-old age group. Asthma prevalence comparing non-Hispanic blacks and non-Hispanic whites showed a higher prevalence for non-Hispanic blacks by 15% in 1980–1981 and 29% in 1995–1996. Asthma attack prevalence was 5.4% in 1996 and remained plateaued from 1997–2000. Comparison to years before 1997 are precluded by changes in the NHIS design. Asthma office visits grew 3.8% per year from 1989–1999 and hospitalization rates increased 1.4% per year from 1980–1998. Deaths from asthma increased by 3.4% per year from 1980–1998. The greatest mortality occurred in adolescents. Black children were >3 times as likely to be hospitalized and in 1997–1998 were >4 times as likely to die from asthma compared with white children throughout the study.

Conclusions. The increasing burden in childhood asthma may finally be plateauing. The disparities between black children compared with white children remains quite significant for asthma health care utilization and mortality.

Reviewer’s Comments. Could the dramatic and concerning increases in childhood asthma seen over the last 2 decades finally be leveling off? Despite this suggested trend, asthma remains the most common chronic disease of childhood. The 1997 redesign of the NHIS makes following asthma trends somewhat difficult but does emphasize the importance of tracking changes in future years. Perhaps most concerning is the increased increase in hospitalizations and racial disparities. Continuing research efforts are being supported to determine the multifactorial causes of asthma inception in a variety of specific populations including inner-city children and high-risk atopic children.

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ENVIRONMENTAL ALLERGENS

EARLY SENSITIZATION TO HOUSE DUST MITHE IS A MAJOR RISK FACTOR FOR SUBSEQUENT DEVELOPMENT OF BRONCHIAL ASTHMA IN JAPANESE INFANTS WITH ATOPIC DERMATITIS: RESULTS OF A 4-YEAR FOLLOW-UP STUDY


Purpose of the Study. To clarify factors involved in the development of bronchial asthma (BA) in children with atopic dermatitis (AD).

Study Population. One hundred sixty-nine infants (age <12 months) with AD who had been seen in the pediatric outpatient clinics of Kyoto, Gunma, and Gifu University Hospitals and affiliated hospitals between August 1994 and July 1995. The infants had neither BA nor episodes of recurrent wheezing at time of registration.

Methods. Patients were followed for 4 years. The outcome of AD, development of BA, and changes in immunologic and other parameters were examined. Total immunoglobulin (IgE) levels and specific IgE against house dust mite (HDM), egg white, cow’s milk, wheat, rice, and soybean were examined using the CAP-RAST (radioallergosorbent test). Family history of AD and BA among relatives was obtained from interviews with the parents. Risk factors for the development of BA were analyzed for each follow-up year.

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Mark H. Moss

*Pediatrics* 2003;112;479

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