smokers were 87% and 84%, respectively. The percentages of physicians with high levels of self-efficacy for advising parents and patients about smoking cessation were 59% for both. Previous training in smoking cessation counseling was associated with higher levels of self-efficacy for all 4 skills assessed, including inquiring about the patient’s smoking status (odds ratio [OR]: 3.91; 95% confidence interval: 1.63–9.37), inquiring about parents’ smoking status (OR: 2.51), counseling the patient to quit smoking (OR: 5.30), and counseling a parent to quit smoking (OR: 4.96). The number of years since completing residency training was not related to greater self-efficacy.

Conclusions. The authors concluded that formal training in smoking cessation had significant effects on physician self-efficacy with respect to smoking discontinuation, throughout physicians’ professional careers.

Reviewer’s Comments. The study clearly demonstrated that levels of physician self-efficacy in both screening for and counseling about smoking cessation were significantly enhanced by formal training in this area. The study was limited in that it might not be representative of all pediatricians, because the respondents were more likely to be board-certified in pediatrics than were nonrespondents. In addition, the response rate was 55%, which could limit generalizability. Although there are many examples of formal training programs in smoking cessation counseling, less than one-half of pediatric residency programs currently offer any formal training in smoking cessation counseling. This study suggests that this should be made a priority for all training programs.

Christopher Randolph, MD
Waterbury, CT

EFFECTIVENESS OF ACUTE ASTHMA CARE AMONG INNER-CITY ADULTS


Purpose of the Study. To identify processes of asthma care that result in improved peak expiratory flow rate (PEFR) 2 to 3 weeks after an emergency department visit.

Study Population. A total of 365 adults with asthma who were discharged from a public hospital emergency department after an asthma exacerbation were studied.

Methods. Eligible patients were identified from an administrative database and were invited for a follow-up visit 2 to 3 weeks after discharge from the emergency department. Information regarding 6 processes of care was obtained from emergency department records and questionnaires. These processes of care were 1) inhaled β-receptor agonist at discharge, 2) inhaled corticosteroids at discharge, 3) systemic corticosteroids, 4) a follow-up visit, 5) patient education regarding an inhaler device, and 6) patient education regarding asthma medication use. Each process was examined as a potential predictor of percentage changes in predicted PEFR.

Results. Three hundred sixty-five of 448 eligible patients enrolled in the study, and 309 returned for the follow-up visit. The study population was economically disadvantaged and predominantly African American and Hispanic. The range of percentage PEFR changes was −165% to 590%, with a median of 80%. Male subjects had significantly greater percentage PEFR changes than did female subjects (115% vs 74%, P = .002), and patients with mild asthma had significantly greater percentage PEFR changes than did those with moderate or severe asthma (148% vs 87% and 22%, respectively; P < .001). After adjustment for gender, ethnicity, and asthma severity, appropriate use of systemic corticosteroids at discharge was associated with a 31.6% increase in the predicted PEFR (95% confidence interval: 8.1–55.1%). Asthma severity did not modify the effect of systemic corticosteroids on percentage changes in PEFR.

Conclusions. These findings suggested that, among poor minority adults with asthma, systemically administered corticosteroids improved PEFR 2 to 3 weeks after discharge from an emergency department.

Elizabeth C. Matsui, MD
Baltimore, MD

MORBIDITY PATTERNS AMONG LOW-INCOME WHEEZING INFANTS


Purpose of the Study. Although information is available regarding wheezing and asthma among low-income, school-aged children, less is known about morbidity related to wheezing or asthma among infants and toddlers. The objective of this study was to evaluate biological, environmental, and psychosocial associates of morbidity in wheezing illness in a multiethnic sample of low-income infants ≤2 years of age.

Study Population. A total of 177 infants, 9 to 24 months of age, and their families, recruited from pediatric departments of local hospitals and clinics in the metropolitan Denver area, were studied.

Methods. The protocol required the children to have had ≥3 health contacts with documented wheezing and to have undergone a complete evaluation as part of an environmental intervention program. Baseline evaluations of children included total immunoglobulin E level measurement, environmental assessment of tobacco smoke exposure, assay of urine samples for cotinine, psychosocial assessments (with the Rand Mental Health Battery) of anxiety, depression, positive effect, and emotion and stability of the caregiver, and assessment of health care utilization. Caregiver reports were included in the evaluation. At study entry, prior morbidity attributable to wheezing illness was assessed, primarily on the basis of caregiver reports and medical record documentation of hospitalizations and emergency department visits.

Results. Of the infants in this study, 46% had ≥1 hospitalization and ~60% had ≥2 emergency department visits from birth for treatment of wheezing conditions. Foreign-born Hispanic families took their infants to the emergency department significantly more than did other groups, including United States-born Hispanic families, white families, and black families, although they used fewer controller medications and documented lower illness severity. Overall, 72% of the children were receiving bronchodilators, whereas 28% were receiving controllers. The highest percentage of children receiving controller medications occurred in the white group. There was no relationship between receiving controller medications and experiencing ≥2 emergency department visits. Corticosteroid bursts were, however, associated with hospitalization (P < .001) and emergency department visits (P < .001). Multivariate analyses demonstrated 3 biological factors,
namely, respiratory syncytial virus, elevated immunoglobulin E levels, and cockroach allergy in the home, that were independently associated with hospitalizations within this group. Emergency department visits were associated with caregivers with a status of single parent or smoker ($P = .037$ for single parent and $P = .034$ for smoker).

Conclusions. The authors concluded that ethnic and immigrant status played significant roles in morbidity related to infant wheezing illness. In addition to respiratory infection, allergic processes and social variables played roles, as evidenced by health care utilization.

Reviewer’s Comments. Additional studies of this nature with larger populations, including suburban families, would be of interest to validate these findings. The relationships of ethnic, biological, and social factors to asthma morbidity are certainly consistent, however, with the paradigm of inner-city asthma that has been established for older children and adolescents.

Christopher Randolph, MD
Waterbury, CT

A LONGTUDINAL, POPULATION-BASED, COHORT STUDY OF CHILDHOOD ASTHMA FOLLOWED TO ADULTHOOD


Purpose of the Study. To describe risk factors that may predict the severity and duration of childhood asthma in adult life.

Study Population. A complete birth cohort of 1390 children born between April 1972 and March 1973 in Dunedin, New Zealand, was studied. Of those children, 1037 (91%) were present for the follow-up assessment at 3 years.

Methods. The children were examined every 2 years from 3 to 15 years of age and then at 18, 21, and 26 years. Respiratory questionnaire assessment and pulmonary function testing were performed at ages 9, 11, 13, 15, 18, 21, and 26 years and methacholine challenge testing was performed at all except the 18- and 26-year visits, when bronchodilator responses were studied. Allergic diathesis was measured with immunoglobulin E assays at 11 years, skin tests at 13 years, and both at 21 years.

Results. A total of 613 patients (59%) provided data at every assessment. Seventy-three percent reported ≥1 episode of wheezing, whereas 51% reported ≥1 episode of wheezing. At age 26 years, 72% of the cohort was currently wheezing, with 15% experiencing persistent symptoms and 12% relapsing after a symptom-free period. The predictors of persistent wheezing included severity of house dust mite sensitivity, increased bronchial hyperreactivity, smoking at 21 years of age, and earlier age of symptom onset. Pulmonary function test results were consistently lower for patients with persistent wheezing and those who experienced relapses. The degree of pulmonary function abnormality was measured as the forced expiratory volume in 1 second (FEV₁)/forced vital capacity (FVC) ratio. Among male patients with persistent wheezing, those who experienced relapses began with a FEV₁/FVC ratio of 82% at 9 years of age, which decreased to ~75% by 26 years of age. Similar but less profound abnormalities were seen in the female cohort. Patients with no wheeze ever, intermittent wheezing, or transient wheezing maintained FEV₁/FVC ratios at or just below 85% through the study.

Conclusions. More than 5% of children who wheezed experienced persistence of symptoms into adulthood. The abnormalities in pulmonary function among patients with persistent wheezing and relapse of wheezing occurred early in life (<9 years of age) and persisted throughout life. Patients with transient wheezing or resolved wheezing did not experience progressive loss of lung function.

Reviewer’s Comments. These data confirm that early airflow damage attributable to infection, allergen exposure, or both may lead to abnormalities in pulmonary function that persist throughout life. The chance to intervene in asthma may well occur before our patients are able to tell us that they have any difficulty breathing.

Bradley E. Chippes, MD
Sacramento, CA

WHO GETS DIAGNOSED WITH ASTHMA?
FREQUENT WHEEZE AMONG ADOLESCENTS WITH AND WITHOUT A DIAGNOSIS OF ASTHMA


Purpose of the Study. To evaluate factors related to the failure to make an asthma diagnosis among children with frequent wheezing symptoms and to assess risk factors for frequent wheezing.

Study Population. The study included 122 829 children, 12 to 18 years of age, enrolled in 499 public middle schools in North Carolina during the 1999–2000 school year.

Methods. The study was based on results from the North Carolina School Asthma Survey, a self-reported questionnaire on respiratory disease adapted from the International Study of Asthma and Allergies in Childhood.

Results. Characteristics that were independently related to undiagnosed frequent wheezing, compared with asymptomatic children, included female gender (odds ratio [OR]: 1.45), current smoking (OR: 2.6), exposure to household smoke (OR: 1.6), low socioeconomic status (OR: 1.5), and African American (OR: 1.25), Native American (OR: 1.4), and Mexican American (OR: 1.3) race/ethnicity. There was a minimal negative association with urban residents, with an OR of 0.91. Documentation of allergies was less likely among frequent wheezers (70%), compared with diagnosed asthmatics (86%), but was much higher than among asymptomatic children (36%). Thirty-three percent of children with undiagnosed frequent wheezing reported ≥1 physician visits in the previous year for treatment of wheezing or breathing conditions, compared with 71% of children with diagnosed asthma and 4% of asymptomatic children. The prevalence of any inhaled therapy in the previous 12 months was 12% for undiagnosed frequent wheezers, compared with 78% for diagnosed asthmatics.

Conclusions. The authors concluded that undiagnosed frequent wheezing was independently related to female gender, current smoking, exposure to household smoke, low socioeconomic status, and African American, Native American, and Mexican American race/ethnicity. Children with undiagnosed frequent wheezing were not receiving sufficient health care for their asthmatic conditions.

Reviewer’s Comments. These are rather striking findings that clearly demonstrate the degree to which asthma is underdiagnosed in some populations.

Christopher Randolph, MD
Waterbury, CT

HEALTH CONSEQUENCES ASSOCIATED WITH FREQUENT WHEEZING IN ADOLESCENTS WITHOUT ASTHMA DIAGNOSIS

MORBIDITY PATTERNS AMONG LOW-INCOME WHEEZING INFANTS
Christopher Randolph
Pediatrics 2004;114;532

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Christopher Randolph
*Pediatrics* 2004;114;532

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