Pub. (02-5075) found that “evidence neither supports nor refutes the benefits of written action plans based on peak-flow monitoring compared with symptom-based plans in improving health care utilization, symptoms, or lung function” and even further that “data are insufficient to support or refute the benefits of using written asthma action plans compared with medical management alone.” A recent Cochrane systematic review also found no difference in any outcome measure when comparing written action plans based on peak-flow measurements to those based on symptoms or any difference in outcomes when formal written action plans were or were not provided. I believe we have ample evidence to abandon the routine use of peak-flow meters.

JOHN M. KELSO, MD
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COUCHING IN PRE-SCHOOL CHILDREN IN GENERAL PRACTICE: WHEN ARE RAST’s FOR INHALATION ALLERGY INDICATED?


Purpose of the Study. To identify patterns of clinical history associated with extreme (high or low) probabilities of allergic sensitization in coughing children to restrict allergy testing to those with an intermediate probability of sensitization.

Study Population. A total of 752 children in the Netherlands, aged 1 to 4 years, visiting their general practitioners for coughing (≥5 days), were studied.

Methods. Parents completed a questionnaire on family history of atopy, breastfeeding, smoking, pets, and floor covering. Sera from the children were tested for IgE antibodies to house dust mite, cat, and dog by using the RadioAllergoSorbent Test (RAST). Data of 640 children could be analyzed; 83 children (13%) were IgE positive to at least 1 allergen. In a logistic-regression analysis, a scoring formula for the prediction of being IgE positive was constructed by using variables from the patient’s history.

Results. Significant contributors for sensitization were: 3 to 4 years old (odds ratio [OR]: 2.6), infantile eczema (OR: 5.4), positive family history of mite allergy (OR: 2.2), sibling(s) with pollen allergy (OR: 5.5), and smoking by parents (OR: 1.8). If only 1 of these characteristics is present, the probability of sensitization was <25%.

Conclusions. Patient history–derived information contributes to distinguishing children who are at low risk for sensitization to house dust mite, cat, and dog. Watchful waiting may be preferred over testing if only 1 risk factor is present. Otherwise, a negative RAST may help to exclude sensitization, whereas a positive RAST helps to establish the diagnosis.

Reviewers’ Comments. Chronic cough is a very common symptom in childhood and accounts for a large number of visits to the pediatrician each year. Although many allergic children have symptoms of cough, there are numerous diagnoses that also need to be considered during an evaluation for chronic cough. This study supports limiting allergy testing in children with persistent cough to those with particular multiple risk factors for atopy to decrease unnecessary testing in young children.

JULIE WANG, MD
SCOTT H. SICHERER, MD
New York, NY

BENEFITS OF A SCHOOL-BASED ASTHMA TREATMENT PROGRAM IN THE ABSENCE OF SECONDHAND SMOKE EXPOSURE: RESULTS OF A RANDOMIZED CLINICAL TRIAL


Purpose of the Study. To evaluate the impact of providing inhaled corticosteroids in the school setting on asthma symptoms of urban children with asthma.

Study Population. Children aged 3 to 7 years from 54 urban schools in Rochester, New York, with asthma ranging in severity from mild persistent to severe.

Methods. The study had 2 arms into which patients were randomized: a school-based care group or a usual-care group. In the school-based care group, 2 puffs of fluticasone, 110 µg per puff, were given with a spacer each day that the children were in school. Identical medication with a spacer was given for home use on days that the children were not in school. Those children who were using >1 preventive medication were instructed to continue their other medications at the discretion of their primary care providers. For the patients in the usual-care group, their primary care providers and parents were informed of the severity of their asthma, but there were no other interventions. The main outcome measure was the number of symptom-free days during the 2 weeks leading up to monthly telephone interviews.

Results. Of 242 eligible children, 184 were enrolled; 93 children were allocated to the school-based group, and 91 were allocated to the usual-care group. The overall response rate for the follow-up interviews was 94%. Although there was not a significant difference in symptom-free days between the treatment groups, there were significant improvements in the school-based group in secondary measures such as caregiver quality of life (0.63 change score vs 0.24; P = .047), missed school days because of asthma (6.8 vs 8.8 days; P = .047), and symptom-free days during early winter months (mean days per 2-week period: 9.2 vs 7.3; P = .02). A posthoc analysis revealed that all the significant changes were among children where were not exposed to smoking in the home. Furthermore, among children who were not exposed to second-hand smoke, the school-based care group had more symptom-free days overall (11.5 vs 10.5 days; P = .046), had fewer days needing rescue medications (1.6 vs 2.3 days; P = .03), and were less likely to have had ≥3 acute visits for asthma (6 of 47 vs 17 of 54 children; P = .03).

Conclusions. This study demonstrates that a system involving the provision of inhaled corticosteroids in the school improves a number of outcome measures of asthma including missed school days and quality of life of caregivers. This study also demonstrates that such improvements in asthma outcomes are negated by smoke exposure in the home.

Reviewers’ Comments. Health care providers of children with asthma are often frustrated with patients’ poor adherence to medical treatment plans. This study demonstrated that a change in the system of care, using resources that are available in schools, led to improved outcomes. The investigators did not report specifics about actual adherence to the medical treatment given but stated that the children in the school-based treatment group received their medication 84% of days that school was in session, whereas 63% of those in the usual-care group reported using the daily medication. The difference in outcome measures between the school-based and usual-care groups may have been greater if the authors had controlled for several confounding factors (weekend management, etc.).
asthma severity, etc). Nonetheless, this study points the way to future research about and implementation of new systems of asthma care.

BRIAN A. SMART, MD
Glen Ellyn, IL

ASTHMA AMONG HOMELESS CHILDREN: UNDERCOUNTING AND UNDERTREATING THE UNDERSERVED


Purpose of the Study. To determine the prevalence of asthma among a population of homeless children.

Study Population. A total of 740 children whose families entered 3 family shelters in New York City, New York, from June 1998 to September 1999, representing 75% of all children entering these shelters.

Methods. On entry into the shelters, the investigators attempted to screen children with a 1-page, 11-item survey that included questions about daytime and nighttime symptoms, previous diagnosis of asthma, current medications, use of an emergency department for respiratory symptoms, and demographic characteristics. The asthma-symptom questions were coded to allow for staging as outlined in nationally recognized guidelines. The validity of the screening instrument was assessed by comparing the screening results of 117 children with a clinical assessment by a pediatrician or pediatric nurse practitioner. With this assessment, the sensitivity of the screening instrument was 77%, and the specificity was 92%.

Results. The prevalence of asthma in the children who were screened was 39.8%, with 26.9% having a prior physician diagnosis of asthma and 12.9% having no prior diagnosis but symptoms consistent with moderate to severe asthma. Furthermore, 50.3% of these children had current symptoms consistent with mild intermittent to severe asthma. Of those children who were <5 years old, 34.2%, 9.8%, 30.1%, and 25.9% had current symptoms consistent with mild intermittent, mild persistent, moderate, and severe asthma, respectively. Of those children who were ≥5 years old, 45%, 17%, 18%, and 20% had current symptoms consistent with mild intermittent, mild persistent, moderate, and severe asthma, respectively. Of those children with a prior physician diagnosis of asthma, the percentage of patients receiving anti-inflammatory treatment was 4%, 11%, 16%, 28%, and 20% for patients with no symptoms and current symptoms consistent with mild intermittent, mild persistent, moderate, and severe asthma, respectively. Finally, 48.6% of children with current asthma symptoms consistent with severe asthma visited an emergency department in the last year for respiratory symptoms, whereas 54.9% of severe asthmatics (and 68% of mild persistent asthmatics) with a prior physician diagnosis of asthma visited an emergency department in the last year for respiratory symptoms.

Conclusions. The data suggest that the routine use of a screening instrument for asthma would identify many at-risk children, an essential first step to providing them with appropriate medical care. Another remarkable finding is the low rate of use of anti-inflammatory medication even among severe asthmatics. This finding, taken along with the high rate of use of emergency department care for respiratory symptoms, provides evidence for a high rate of undertreatment of asthma among homeless children.

Reviewer’s Comments. This study, which provides evidence for a surprisingly high rate of asthma among homeless children, as well as undertreatment with anti-inflammatory medication and overuse of the emergency department, should be viewed by health care providers as a call to action. The medical system seems to have failed these children, and new approaches to their care are worth considering, such as routine screening for asthma, regular visits with primary care providers, and education of caregivers about asthma.

BRIAN A. SMART, MD
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A SCHOOL-BASED CASE IDENTIFICATION PROCESS FOR IDENTIFYING INNER CITY CHILDREN WITH ASTHMA: THE BREATHMOBILE PROGRAM


Purpose of the Study. To evaluate the effectiveness of a school-based screening survey to detect asthma in a large population of inner-city schoolchildren.

Study Population. Parents of schoolchildren in the Los Angeles, California, area.

Methods. A bilingual 7-question self-administered parental asthma-screening survey was administered to 675 consecutive parents before enrolling their children in a free mobile asthma program, the Breathmobile. Participants were recruited by either flyers distributed at the school or referral from school nurses. Surveys were validated by comparing responses to the presence and severity of asthma as determined by the allergist evaluating the patient on the Breathmobile using National Heart, Lung, and Blood Institute guidelines. The surveys (n = 27,526) then were distributed to 1,212 classrooms in 24 participating schools, with incentives offered to the teachers for high return rates.

Results. For survey validation, parental responses for 636 children were compared with physician classification, and the combination of questions that provided the best overall sensitivity and specificity were determined. Based on this algorithm, an abbreviated 5-question survey was developed with a positive classification resulting from a “yes” to asthma diagnosis or to any 3 of the following: chest tightness, trouble breathing, or exercise-induced and daytime symptoms. This survey was validated in a larger population of schoolchildren, yielding a sensitivity of 83.4%, specificity of 85.4%, positive predictive value of 93.9%, and negative predictive value of 65.5%. Offering a $25 school-supply gift-certificate incentive increased survey return rates from 35.3% to 65%, with return rates of ≥80% in many classrooms. A prevalence estimate of 14.1% children with probable asthma in Los Angeles schoolchildren was calculated by using this model.

Conclusions. The abbreviated 5-question survey yielded similar results when compared with the 7-question original survey. The surveys were easily distributed and analyzed with limited personnel using scanning software. The survey has been a useful tool for screening schoolchildren who may benefit from Breathmobile services and is an effective screening tool to identify children with probable asthma in this population of inner-city schoolchildren.

Reviewer’s Comments. This article describes the utility of a brief survey in identifying children with asthma in an inner-city, primarily Hispanic population. This survey has been used by the Los Angeles Breathmobile to screen >25,000 children, and it has been the model for similar surveys used by the 4 other Breathmobile programs in the country. Jones et al should be commended for their trail-
Benefits of a School-Based Asthma Treatment Program in the Absence of Secondhand Smoke Exposure: Results of a Randomized Clinical Trial
Brian A. Smart
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