DIAGNOSIS AND MANAGEMENT

PILOT STUDY OF A SCREENING QUESTIONNAIRE FOR ASTHMA


Purpose of the Study. To determine the specificity, sensitivity, and feasibility of using a 2-part (child + parent questionnaire) case finding tool (Video-guided Asthma Screening for Children-School Age, VASC-SA) to identify elementary school children with asthma.

Study Population. A total of 350 matched parent-child pairs

Methods. As part of the VASC-SA, children and parents were both queried. The child checklist included 2 practice items and 9 items asking about asthma symptoms and diagnosis. The items were visually cued using a 10-minute videotape using split-screen vignettes, one corresponding to a no response (most children do not ... ) and one to a yes response (some children ... ). Three case definition algorithms were examined (all included inhaled medication, or current diagnosis, or wheeze with 0, 1, or 2 other symptoms). The VASC-SA was administered to English-speaking children in grades 1 to 4 from one school. All parents were sent a written asthma questionnaire. Positive screens were compared with diagnosis obtained from physician report or parent interview.

Results. Asthma prevalence in this sample ranged from 14% to 14.9% using VASC-SA case definitions. Sensitivity for the 3 definitions ranged from 79% to 81% and specificity ranged from 94.5% to 95%. The predictive value positive ranged from 66% to 69% and predictive value negative was 97%. Concordance of child and parent reports was highest for previous asthma diagnosis and use of inhaled medication.

Conclusions. The VASC-SA appears to be a promising new epidemiologic tool to facilitate asthma screening in elementary schools. Prescreening children before parents may offer a practical approach in a large, community-based population.

Reviewer’s Comments. The authors observed that even though asthma is not a common diagnosis, results did not significantly alter the sensitivity or specificity of results (beyond simply wheezing alone, or medications, or current diagnosis). They also point out that the sensitivity and specificity of child-reported symptoms alone were low and thus inadequate without parental verification. Surprisingly, 30% of children with a parent diagnosis of asthma were unknown to the school nurse before the study. In addition, eight children (2.2%) received a new diagnosis of asthma as a result of the screening. Future longitudinal studies should include assessment of asthma severity and follow-up for those with a positive screen (to get a sense of the clinical impact of using the VASC-SA).

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USE OF INHALED ANTIINFLAMMATORY MEDICATION IN CHILDREN WITH ASTHMA IN MANAGED CARE SETTINGS


Purpose of Study. To study the factors associated with the use of inhaled antiinflammatory medication in children in 3 managed care organizations (MCOs).

Study Population. A total of 13 352 children aged 3 to 15 years with at least 1 diagnosis of asthma.

Methods. Using automated databases, a 1-year cross-sectional study of children with asthma aged 3 to 15 years, cared for in 3 MCOs was used to evaluate the association of age and other factors with controller medication use.

Results. A total of 13 352 children were studied. Significantly fewer children aged 3 to 5 years were dispensed any (≥1) controller medication than older children (P < .001). Among children dispensed 6 or more β-agonists, only 39% also received 5 or more controller dispersions, with adolescents significantly less likely than younger children to receive 5 or more controllers (33%; P < .001). Significant differences were observed among MCOs in proportions of patients dispensed controller medication. In a multiple logistic regression model, controlling for frequency of β-agonist-dispensing and MCOs, significantly lower dispensing of any controller medication was seen for those aged 3 to 5 years (odds ratio [OR]: 0.8; 95% confidence interval [CI]: 0.7–0.9) and for girls (OR: 0.9; 95% CI: 0.8–0.96). In contrast, for repeated (≥5) controller dispens-
A COMPREHENSIVE INNER-CITY ASTHMA PROGRAM REDUCES HOSPITAL AND EMERGENCY ROOM UTILIZATION


**Purpose of the Study.** The purpose of this study was to evaluate the effect of a comprehensive care program for asthma on emergency department visits and hospital admission rates in an inner-city pediatric population.

**Study Population.** Three hundred asthma patients ages 2 to 17, who presented to an inner-city emergency department.

**Methods.** Patients were randomized to obtain asthma care in a specialty clinic or to continue to receive care by other health resources. The specialty clinic provided medical treatment, environmental control, education, close monitoring, and 24-hour availability. Monthly questionnaires on use of hospital facilities for asthma care were sent to the caregivers of the children. Retrospective data on the use of resources by study participants was analyzed using a hospital database.

**Results.** One hundred twenty-nine patients, 60 patients in the treatment group and 69 in the control group, met the inclusion criteria of returning 9 questionnaires during 1995 with at least 1 questionnaire being completed for each season. Demographics of the control and treatment groups were similar with the exception that 35% of the treatment group had severe asthma versus 16% in the control group ($P < .05$). During the fist 12 months of the study, 32 patients from the treatment group visited the emergency department 73 times; in comparison, 46 patients in the control group visited the emergency department 269 times. The mean number of emergency department visits per patient per month was 0.101 ± 0.158 for the treatment group versus 0.326 ± 0.704 for the control group ($P = .01$). In both groups, 26% of the patients were hospitalized at least once. During a second study year, 53 patients from the treatment group continued to receive asthma care through the same center. 14 of these patients made 20 emergency room visits during the subsequent 12 months. Of the 66 patients in the control group who continued with the study, 23 patients visited the emergency room 56 times, 0.396 ± 0.716 visits per patient per years for the treatment group compared with 1 ± 2.155 for the control group ($P < .03$). In the second year, 26% of the treatment group patients visited the emergency room at least one, while 53% of the treatment group had visited during the first year ($P < .07$).

**Conclusion.** A comprehensive asthma care program is effective in reducing hospital utilization in the inner city.

Reviewer’s Comments. In this study, the investigators put together what appears to be a very effective comprehensive care program for inner-city asthmatics. Those patients who participated in the study appeared to benefit from the support and education. As we see again and again, preventive measures can significantly reduce emergency room and hospital utilization and this will lead to decreases in medical costs. The study also demonstrates the difficulties that are constantly encountered in intervention programs in the inner-city population. Although 300 patients enrolled, only 129 completed the study. Also, the high level of intervention is quite difficult for practitioners to achieve. Future studies should focus on techniques for improving patient compliance with intervention programs, as well as which interventions in a comprehensive intervention program are effective in reducing hospital utilization.

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CONTINUED INCREASE IN THE PREVALENCE OF ASTHMA AND ATOPY

Downs SH, Marks GB, Sporik R, Belosouva EG, Car NG, Peat JK. *Arch Dis Child.* 2001;84:20–23

**Purpose of the Study.** Asthma and allergy were reported by many studies to be on the rise in the early 1990s. Has this trend continued?

**Study Population.** A total of 1016 schoolchildren age 8 to 11 years in Wagga Wagga, Australia, studied in 1997 compared with 850 schoolchildren of the same ages studied in the same location in 1992.

**Methods.** A parental questionnaire was used to estimate asthma prevalence. Key questions asked to parents included “Has your child wheezed in the last 12 months?” and “Has your child ever been diagnosed as having asthma by a doctor or at a hospital?” Prick skin tests to common aeroallergens were also performed. A child was considered atopic if they had 1 or more positive skin tests.

**Results.** See Table below:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>1992</th>
<th>1997</th>
<th>Percentage Increase (95% Confidence Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheezed</td>
<td>22.1</td>
<td>27.2</td>
<td>5.1 (1.2–9.0)</td>
</tr>
<tr>
<td>Diagnosed with asthma</td>
<td>30.5</td>
<td>38.6</td>
<td>8.1 (3.8–12.4)</td>
</tr>
<tr>
<td>Atopic</td>
<td>38.7</td>
<td>45.4</td>
<td>6.4 (2.2–11.2)</td>
</tr>
</tbody>
</table>
Use of Inhaled Antiinflammatory Medication in Children with Asthma in Managed Care Settings
Stuart E. Turvey and Lynda C. Schneider

Pediatrics 2002;110;450

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