EFFECTIVENESS OF SCREENING EXAMINATIONS TO DETECT UNRECOGNIZED EXERCISE-INDUCED BRONCHOCONSTRICTION


Purpose of the Study. To determine if physician-administered physical examination and screening questionnaire accurately detects exercise-induced bronchoconstriction (EIB) in adolescent athletes.

Study Population. Two hundred fifty-six adolescents participating in organized sports from 3 suburban high schools.

Methods. The number screened positive from the examination and questionnaire was compared with EIB diagnosed by the “gold standard” of a 7-minute exercise challenge followed by serial spirometry.

Results. EIB was diagnosed in 9.4% of the athletes. However, 39.5% of the group had a diagnosis suggestive of EIB by screening tests, verified by challenge in only 12.9%. Among the remainder with a negative screen, 7.8% actually had EIB on challenge. Adolescent athletes who screened negative for a history of asthma, EIB, and allergic rhinitis accounted for 45.8% of the subjects diagnosed with EIB.

Conclusions. EIB occurs frequently in adolescent athletes and screening by physical examination and medical history does not accurately detect it.

Reviewers’ Comments. The diagnosis of EIB is important because the disorder can be severe and previous studies show that of children who died suddenly during sports participation, 32 of 108 died of severe asthma identified clinically at the time of death or on autopsy. An accompanying editorial by Bokulic points out that it is impractical to perform exercise testing with spirometry in all adolescent athletes. The editorial also emphasizes a number of other controversial aspects of the diagnosis of EIB and variations in testing procedures. The International Olympic Committee has announced that β-agonists will not be permitted without a documented need to treat asthma or EIB and that clinical proof and laboratory evidence is required to justify the treatment. This approach may someday extend to athletes in other venues. Clearly, more sensitive screening methods are needed.

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PATIENT FACTORS AND MEDICATION Guidelines Adherence Among Older Women With Asthma


THE EARLY COURSE OF NEWLY DIAGNOSED ASTHMA


Purpose of the Study. The authors describe the intensity of therapy for patients with newly diagnosed asthma and how it changed during subsequent years in relation to age, sex, and initial level of therapy.

Study Population and Methods. We examined a cohort of 13,671 patients in Saskatchewan, Canada, who were initially between the ages of 5 and 44 years. Patients were followed prospectively, and the intensity of asthma therapy was measured during successive 12-month periods.

Results. Based on the intensity of asthma drug therapy during the first year after entry into the cohort, 6661 patients (48.7%) were initially prescribed therapy judged to be appropriate for mild asthma, and 977 (7.1%) were dispensed medications in a manner suggesting their asthma was severe; the remaining 6033 (44.1%) were classified as receiving treatment of intermediate intensity. Among patients initially classified as receiving treatment appropriate for mild disease, only about 3% were dispensed medications that suggested that their asthma had become severe during up to 5 years of follow-up. Intensity of therapy waned in a substantial proportion of patients who were initially classified as having severe asthma, especially if they were initially younger than 15 years of age.

Conclusions. Patients with asthma who are initially treated with therapy appropriate for mild asthma are rarely treated later with therapy suggesting the advent of severe disease. Patients initially dispensed medications suggesting the presence of severe asthma often see the intensity of treatment wane over time.

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**Asthma in Older Patients: Factors Associated with Hospitalization**


**Purpose of the Study.** Although older adults (≥65 years) with asthma have higher rates of hospitalization and death from asthma than younger adults, the reasons for this are not known. The purpose of this study was to determine if patterns of care were less favorable for older than younger adults with asthma and to assess whether patient characteristics such as symptom severity and comorbid illnesses explain the higher rate of hospitalization.

**Study Population and Methods.** This study was a prospective cohort study of 6590 adults with asthma in 15 managed care organizations in the United States. Participants completed a survey of demographics, symptoms, health status, comorbid illnesses, treatment, access to care, self-care knowledge, physician specialty, and health care use.

**Results.** Among 6590 adults with asthma, 554 (8%) were 65 years or older and 1942 (29%) were 18 to 34 years old. Older patients were more likely than younger patients to be men, white, non-Hispanic, and less educated. At baseline, older patients reported a greater frequency of asthma-related symptoms, such as daily cough (36% vs 22%; \( P < .001 \)) and wheezing (27% vs 22%; \( P < .002 \)). They were also more likely to report comorbid conditions, such as sinusitis (50% vs 38%), heartburn (35% vs 23%), chronic bronchitis (43% vs 16%), emphysema (19% vs 1%), congestive heart failure (8% vs 1%), and history of smoking (54% vs 34%; all \( P < .001 \)). Care appeared to be better for the older patients compared with the younger, including more frequent use of inhaled corticosteroids, greater self-management knowledge, and fewer reported barriers to care. In the follow-up year, older patients were approximately twice as likely to be hospitalized (14%) than were younger patients (7%; \( P < .001 \)). In multivariate analysis, however, older age was not predictive of future hospitalization (odds ratio: 1.05; 95% confidence interval: 0.68–1.61), after adjustment for sex, ethnicity, education, baseline asthma symptoms, health status, comorbid illnesses, and tobacco use. Factors independently associated with hospitalization included being female, nonwhite, less educated, and less physically healthy, and more frequent asthma symptoms.

**Conclusions.** Although the older adults with asthma had greater respiratory symptoms and more comorbidity than their younger counterparts, chronologic age was not an independent risk factor for hospitalization. Appropriate care for older adults with asthma should address asthma symptoms and other chronic conditions.

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**Asthma in Adventure Travelers: A Prospective Study Evaluating the Occurrence and Risk Factors for Acute Exacerbations**


**Purpose of the Study.** Exacerbation of asthma during travel to remote regions may lead to devastating consequences. The course of asthma in travelers and the risk factors for disease exacerbation during travel have not been studied. The authors screened 5835 consecutive travelers and identified 203 patients with asthma. Before travel, all enrollees were assessed for presumed risk factors for asthma exacerbation by means of an interview and an exercise test combined with spirometry. After travel, data regarding travel characteristics and asthma severity were recorded by means of a structured telephone interview.

**Results.** The 203 enrollees visited 56 countries for a median duration of 13 weeks, 147 were engaged in high-altitude trekking, and 88 had asthma attacks. Among these, 40 reported worsening asthma during travel, 32 experienced the worst asthma attack ever, and 11 reported a life-threatening asthma attack. Two independent risk factors for attacks during travel were identified: frequent use (≥3 times weekly) of inhaled bronchodilators before travel (relative risk [RR]: 3.35; 95% confidence interval [CI]: 1.75–6.39) and participation in intensive physical exertion during treks (RR: 2.04; 95% CI: 1.04–3.98). When both risk factors were present, the RR for asthma attacks increased to 5.52 (95% CI: 2.81–10.84).

**Conclusions.** Asthma frequently worsens during travel and should not be ignored as a potentially life-threatening condition requiring pretravel consideration.
PATIENT FACTORS AND MEDICATION GUIDELINE ADHERENCE AMONG OLDER WOMEN WITH ASTHMA

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