

in the surveys in 2004. The lifetime prevalence of asthma rose from 24.3% in 1999 to 28.4% in 2004 but decreased to 22.1% in 2009 ( $P < .001$ ). The prevalence of wheeze in the previous 3 years decreased from 27.9% in 1999 to 25.2% in 2004 and 22.2% in 2009 ( $P < .001$ ). The lifetime prevalence of eczema rose between 1999 and 2004 (21.4%–34.1%), and there was a small decline in 2009 (33.5%) ( $P < .001$ ). Similar trends were seen for hay-fever prevalence. There was a significant change in prevalence for girls compared with boys for asthma, eczema, and wheeze in the previous 3 years.

**CONCLUSIONS.** Asthma, eczema, and hay fever remain common health conditions for children in the United Kingdom, but after many years of increasing prevalence, the number of affected children seems to finally be decreasing.

**REVIEWER COMMENTS.** From 1964 to 2004, the prevalence of asthma, eczema, hay fever, and wheeze in the previous 3 years had increased in the United Kingdom. Since 2004, there has been a decline in the prevalence of these health conditions. A similar trend has also been reported in other countries, and we hope that rates will continue to decline worldwide. Although this study was not designed to explain why asthma prevalence has decreased, the authors did comment on reasons that might account for the decline, including revised guidelines for diagnosing and managing asthma and bans on smoking in public places.

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### **Predictive Factors for Airway Hyperresponsiveness in Children With Respiratory Symptoms**

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**PURPOSE OF THE STUDY.** Asthma diagnosis can be challenging to make in children without persistent symptoms. Factors that contribute to this challenge include poor perception of dyspnea by children with asthma and their families and a lack of objective findings of reversible airway obstruction.

**STUDY POPULATION.** This study was a retrospective analysis of Turkish children aged 6 to 18 years with suspected asthma whose spirometry results had not met standard criteria for obstructive physiology and who completed a methacholine challenge (MCC).

**METHODS.** Parents completed a standardized questionnaire regarding symptoms before the MCC. Investigated

symptoms included wheezing, daytime cough, nocturnal cough, exercise-induced cough, dyspnea, and exercise-induced dyspnea. Patients with a decrease in forced expiratory volume in 1 second ( $FEV_1$ ) of 20% after exposure to a concentration of  $\leq 8$  mg/mL of methacholine were considered positive for airway hyperresponsiveness (AHR). Statistical analysis was used to analyze the association between demographic, symptomatic, and spirometric parameters with AHR on MCC.

**RESULTS.** The study included 111 children who ranged in age from 6 to 18 years (median: 10.2 years), and 53% of them were male. AHR was detected in 67 patients (60.3%). Patients with AHR were younger than those without AHR (9.9 vs 12.1 years). They tended to have both nocturnal and exercise-induced cough (26.9% vs 6.8%;  $P = .008$ ; positive predictive value [PPV]: 85.7%; negative predictive value [NPV]: 45.5%). The combination of nocturnal and exercise-induced cough along with borderline bronchodilator response (change in  $FEV_1$  of 7%–11%) was highly predictive of AHR (11.7% vs 0%; PPV: 100%; NPV: 44.2%). Peripheral blood eosinophilia ( $\geq 500/\mu\text{L}$ ) was found in 23.4% of the patients with AHR and in 4.7% of those without AHR ( $P = .009$ ; PPV: 88.2%; NPV: 45.5%). The combination of eosinophilia and borderline bronchodilator response was more frequent in patients with AHR in comparison with those without AHR (10.3% vs 0%; PPV: 100%; NPV: 44.1%). In contrast, those with AHR were less likely to report dyspnea (20.9% vs 38.6%) or exercise-induced dyspnea (26.9% vs 47.7%) than those without AHR.

**CONCLUSIONS.** These data are useful when applied to a selected population of diagnostically challenging patients for whom MCC is not practical or feasible.

**REVIEWER COMMENTS.** The results of this study, similar to others, confirm that there is no one symptom, demographic variable, or diagnostic test that reliably predicts AHR and asthma but, rather, a combination of them that can be helpful. It should be noted that patients with AHR had increased levels of eosinophilia, which has been reported in adult populations too. It is interesting to note that these data failed to detect an association between wheezing and AHR, which was seen in previous studies. The authors attributed this result to the lack of a correlate for wheezing in Turkish, which is useful to consider in an increasingly international world in which physicians commonly see patients who do not speak the same language and might not be familiar with this concept either.

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## Predictive Factors for Airway Hyperresponsiveness in Children With Respiratory Symptoms

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