as two thirds of the airway caliber (the distance between the posterior and anterior pharyngeal wall). Patients were divided into 4 groups by age—1 to 3 years, 4 to 6 years, 7 to 12 years, and 13 to 18 years. The frequency of the following clinical symptoms was compared between the groups with and without AH: 1) otitis media (>6 episodes per year defined clinically); 2) lower respiratory infections (>3 episodes a year defined clinically as bronchitis, croup, or pneumonia); 3) sinusitis (>5 episodes per year defined radiographically as complete opacity, air fluid level or >4 mm mucosal thickening); 4) exposure to cigarette smoking (>2 weeks per month); 5) sleep disorders (positive history confirmed by doctors); 6) use of antihistamines/decongestants (>2 weeks per month over the last 3 years); and 7) percutaneous allergy testing to dust mites, molds, animal danders, cockroach, and seasonal pollens.

Results. The frequency of otitis media was statistically significantly more frequent in patients with AH aged 1 to 4 and the 4 to 6 years. The frequency of lower respiratory tract infections was statistically significantly higher in all age groups. The frequency of sinusitis was higher in AH patients for ages 4 to 6 and 7 to 12. Exposure to cigarette smoking was higher in all age groups with AH, but only statistically significant for ages 4 to 6 years. Frequency of sleep disorders was higher in AH patients for all age groups studied. Use of antihistamines/decongestants was statistically significantly greater in all AH patients except for the youngest ones measured at 1 to 3 years. Allergy skin testing was similar in both groups for measurements to dust mites, animal danders, and seasonal allergens. All AH patients had highly statistically significantly greater skin test reactivity to molds.

Conclusions. In this study population, children with allergic rhinitis along with adenoidal hypertrophy had a greater frequency of lower respiratory tract infections, sleep disorders, and skin test reactivity to molds. Otitis media occurred more frequently in younger-aged children, sinusitis more frequently in children between the ages of 4 to 12. Antihistamine/decongestants were used more frequently in all children except the youngest age group.

Reviewers' Comments. Although there are a number of weaknesses in this retrospective study, the association of AR and adenoid hypertrophy in children has not been well-characterized. This was a retrospective study of a large number of consecutively seen patients with AH, but the control patients were apparently selected randomly. AH was defined radiographically rather than by fiberoptic examination. The definition of the clinical parameters was apparently clinically arbitrary, ie, otitis media clinically defined, lower respiratory infection defined as bronchitis, croup, and pneumonia but no criteria were given, sleep disorders defined by history without polysomnogram and parameter of use of antihistamine/decongestants was not specified. Despite these critical problems, the study has some interesting findings. The frequency of lower respiratory infections was greater in the AH patients in addition to the expected increased frequency of sinusitis and otitis. Skin test reactivity was significantly greater only to molds. This may be representative of the geographic location of the study (Florida) with greater humidity and mold exposure, yet dust mite sensitivity was similar in both groups. Hopefully, additional prospective studies looking at this association will be forthcoming from other areas of the country looking at allergen sensitivity in children with AH.

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CHRONIC NASAL CONGESTION AT NIGHT IS A RISK FACTOR FOR SNEezING IN A POPULATION-BASED COHORT STUDY

Young T, Finn L, Palta M. Arch Intern Med. 2001;161: 1514–1519

Purpose. Nasal congestion at night is thought to have a role in snoring and sleep apnea, but this hypothesis has not previously been tested in a population-based study.

Study Population and Methods. Baseline and 5-year follow-up data on self-reported nocturnal nasal congestion and snoring frequency were collected from a population-based sample of 4916 men and women (age range: 30–60 years at baseline) enrolled in the ongoing Wisconsin Sleep Cohort Study. In-laboratory polysomnography was performed on a subset (n = 1032) of the study population to determine the frequency of apnea and hypopnea episodes during sleep. Logistic regression was used to estimate odds ratios for snoring with chronic nasal congestion at night.

Results. Nocturnal nasal congestion frequency was independently associated with snoring frequency in cross-sectional analyses. The odds ratios (adjusted for sex, age, body habitus, and smoking) for habitual snoring with severe (always or almost always) nasal congestion versus none was 3.0 (95% confidence interval: 2.2–4.0). This association was not explained by habitual snorers with frank sleep apnea (ie, ≧5 apnea and hypopnea episodes per hour of sleep). Prospective analyses showed that persons with chronic severe nasal congestion had a high risk of habitual snoring according to the data from the 5-year follow-up survey: the odds ratio for habitual snoring and reporting congestion always or almost always at both baseline and follow-up was 4.9 (95% confidence interval: 2.8–8.8).

Conclusions. Nocturnal nasal congestion is a strong independent risk factor for habitual snoring, including snoring without frank sleep apnea. Intervention studies are needed to determine if snoring can be reduced with treatment of nasal congestion.

Reviewers’ Comments. This is the first study to identify chronic nasal congestion as a risk factor for simple (ie, without hypopneas or apnea) snoring. Previously, it had been my understanding that nasal congestion was not felt to be an important single independent risk factor for snoring or other sleep-disturbed breathing (SDB) syndromes. Because simple snoring may be an early manifestation of SDB, implications for diagnosis and therapy are apparent. Nasal congestion attributable to allergic causes was not a stronger prediction of snoring than other causes of nasal congestion.

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COGNITIVE AND OTHER ADVERSE EFFECTS OF DIPHENHYDRAMINE USE IN HOSPITALIZED OLDER PATIENTS


Purpose of the Study. Diphenhydramine hydrochloride is a commonly prescribed medicine in hospitalized patients, but its adverse effects on older patients remain unclear.

Study Population and Methods. A total of 426 hospitalized medical patients aged 70 years or older were enrolled in a prospective cohort study in a university hospital. Measurements included baseline and daily assessments including Mini-Mental State Examination scores, Confu-
Asthma

PATHOPHYSIOLOGY

INCREASED INCIDENCE OF ASTHMA-LIKE SYMPTOMS IN GIRLS WHO BECOME OVERWEIGHT OR OBESE DURING THE SCHOOL YEARS


Purpose of the Study. Recent cross-sectional studies have shown an association between obesity and an increased risk of asthma, especially in females. These authors used data from the Tucson Children’s Respiratory Study to search for an increase in asthma in children who became overweight between 6 and 11 years of age.

Study Population. The participating children are a birth cohort enrolled between 1980 and 1984 and followed longitudinally. All are resident in the Tucson, Arizona, area.

Methods. Symptom questionnaires were completed by parents when the children were 6, 8, 11, and 13 years of age. Weight and height were measured at age 6 and 11. Home peak flow readings were gathered at age 11. Only those children providing peak flow measurements twice daily on at least 4 days over 1 week were included in the analysis. Spirometry including bronchodilator response was also obtained at age 11.

Results. By age 6 and 11 years, 55% and 48%, respectively, of the original cohort remained in the study. Several factors were associated with a body mass index (BMI) in the overweight (BMI > 85 percentile to < 95 percentile) or obese (BMI > 95 percentile) range. Females who were overweight or obese at the age 11 visit were more likely to have a concurrent history of wheezing than the nonoverweight. This effect was not present in girls at age 6 nor in boys at either age. Females who became overweight or obese between age 6 and 11 were roughly 7 times more likely to have developed new-onset asthma at age of 11 or 13. This history of wheezing was accompanied by an increase in peak flow variability and bronchodilator responsiveness. This association of obesity with new-onset asthma between 6 and 13 years was seen in the boys.

Conclusions. The authors conclude that development of an elevated BMI between age 6 and 11 is associated with an increased risk of asthma in girls. They speculate that there are 2 likely explanations for the observation. First, obesity may influence circulating female sex hormones; these hormones are thought to alter beta-2-adrenergic responsiveness and may have other proasthmatic activity. A second possibility is the presence of a subgroup of girls with genetic alterations in the responsiveness of female hormone receptor(s). Such a change could lead to a predisposition to obesity and to asthma symptoms. The authors note a third possibility, a relationship of lack of exercise and increased risk of asthma and obesity, that cannot be addressed by the data available.

Reviewers’ Comments. More risk factors for asthma continue to come to light. Certainly the risks are not all allergic, nor are they even all restricted to obvious links to the immune system. Now to the allergic risks, we might add the risks of cleanliness (the hygiene hypothesis), small sibships, and obesity. For early-life wheezing, there’s the risk of viral infection, but for later-life wheezing these infections may be protective. Perhaps we will really understand all this in another couple of decades.

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Cognitive and Other Adverse Effects of Diphenhydramine Use in Hospitalized Older Patients

Allen Adinoff

*Pediatrics* 2002;110;442

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/110/Supplement_2/442.1.full.html