Results. Of the 426 patients, 114 (27%) received diphenhydramine during hospitalization and shared similar baseline characteristics including age, sex, delirium risk, and Mini-Mental State Examination scores compared with nonexposed patients. The diphenhydramine-exposed group was at an increased risk for any delirium symptoms (relative risk [RR]: 1.7; 95% confidence interval [CI]: 1.3–2.3) and for individual delirium symptoms, including inattention (RR: 3.0; 95% CI: 1.5–5.9), disorganized speech (RR: 5.5; 95% CI: 1.0–29.8), and altered consciousness (RR: 3.1; 95% CI: 1.6–6.1). Exposed patients also had increased risk for urinary catheter placement (RR: 2.5; 95% CI: 1.0–6.0) and longer median length of stay (7 vs 6 days; \( P = .009 \)). A dose-response relationship was demonstrated for most adverse outcomes. Overall, 24% of diphenhydramine doses were administered inappropriately.

Conclusions. Diphenhydramine administration in older hospitalized patients is associated with an increased risk of cognitive decline and other adverse effects with a dose-response relationship. Careful review of its use is necessary in this vulnerable population.

Reviewer’s Comments. Adverse reactions were mainly cognitive or related to anticholinergic effects. Most of the patients (2/3) received diphenhydramine as a routine sleep aid; another 20% prophylactically before blood transfusion (in the absence of a previous transfusion reaction). Neither would seem to be legitimate indications. It probably goes without saying that the elderly (and very young) are most vulnerable to medication side effects. So remember: be careful and don’t poison granny! This study also makes a strong case for the use of nonsedating antihistamines in this age group.

Allen Adinoff, MD
Aurora, CO

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 beta2-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.

Reviewer’s 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 siblings, 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.

Larry Williams, MD
Durham, NC

BODY MASS INDEX AND ASTHMA IN THE MILITARY POPULATION OF THE NORTHWESTERN UNITED STATES


Purpose of the Study. To examine the association between asthma and obesity among adults.

Study Population. Enrollees in a military managed care program, ages 17 to 96 years.

Methods. The investigators obtained data from 45743 enrollment questionnaires that were completed between January 1997 and December 1998. After excluding those with emphysema/chronic bronchitis or implausible or missing body mass index (BMI) data, case-control analysis was performed on 2577 asthma cases and 36347 controls. Because asthma was self-reported, the investigators selected random samples of 1000 cases and 1000 controls for verification. Status of the subject as a case or a control was verified by cross-referencing the cases and controls with medication profiles obtained from a computerized military health record system. Univariate analysis and multiple logistic regression was performed on both the larger case-control group and the verified case-control sample.
Increased Incidence of Asthma-Like Symptoms in Girls Who Become Overweight or Obese During the School Years
Larry Williams

Pediatrics 2002;110;443

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Larry Williams

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