

diagnosed with AR before the age of 50 ($n = 2279$). The control group consisted of 2 people without AR matched to each patient according to age, gender, socioeconomic status, and the practice to which they were assigned ($n = 4558$). The mean age in both groups was 25 years, and the mean length of follow-up was 8.4 years.

METHODS. This is a historic cohort study. Cox proportional hazard analyses were used to assess the relative risk of asthma in patients with AR relative to controls.

RESULTS. In the AR group, 356 patients were also diagnosed with asthma: 198 before the AR diagnosis was made and 158 after it was made. Of those not yet diagnosed with asthma, the hazard ratio for developing asthma relative to controls was 4.86 (95% confidence interval: 3.50–6.73; $P < .001$). Atopic eczema and socioeconomic status were not found to significantly affect the risk of asthma.

CONCLUSIONS. Physician-diagnosed AR is an independent risk factor for a future diagnosis of asthma. A significant number of patients developed asthma before the diagnosis of AR, which suggests that, although there is a link between AR and asthma, the risk is not necessarily prospective. The assessment of which came first is limited by the fact that AR is often self-treated and might not be diagnosed by a physician.

REVIEWER COMMENTS. Data were not broken down according to age group, but the calculated hazard ratio is comparable to that of previous studies that only evaluated adults. Most AR cases were diagnosed by subjective symptoms, so this group undoubtedly contained many people with nonallergic rhinitis. In addition, the control group might have included some with AR who self-treated without being diagnosed by a physician. Because of these factors, the derived hazard ratio might be an underestimate. According to the authors, this is the largest prospective investigation of the association between AR and asthma in a primary care population with such a wide age range and length of follow-up. If so, this study provides the best definition to date of the risk of asthma for patients with AR in the primary pediatric population.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2011-2107NN

Paul B. Keiser, MD
Cecilia P. Mikita, MD, MPH
Washington, DC

Allergic Rhinitis as a Predictor for Wheezing Onset in School-aged Children

Rochat MK, Illi S, Ege MJ, et al; Multicentre Allergy Study (MAS) Group. *J Allergy Clin Immunol*. 2010;126(6):1170–1175

PURPOSE OF THE STUDY. To determine if rhinitis in early childhood is an independent predictor of wheezing between the ages of 5 and 13 years.

STUDY POPULATION. The study followed 1314 healthy children, from birth to the age of 13 years, as part of the German Multicenter Allergy Study.

METHODS. This was a prospective, multicenter birth-cohort study that used standardized questionnaires, interviews, and objective sensitization methods. To better characterize the association between sensitization and rhinitis on the incidence of wheeze, 4 rhinitis phenotypes were defined: (1) allergic rhinitis (rhinitis plus sensitization); (2) nonallergic rhinitis (rhinitis without sensitization); (3) atopy without rhinitis (sensitization only); and (4) none (control group). The occurrence of rhinitis, wheezing, and sensitization was assessed over time through the age of 13 years. Airway hyperresponsiveness was assessed at the age of 7 years, and specific allergen immunoglobulin E (IgE) was measured yearly.

RESULTS. Of the 1314 children recruited at birth, 83.1% were followed to the age of 2 years, 76.4% to 5 years, 71.5% to 7 years, and 58.3% to 13 years. Overall, the period prevalence of wheezing varied depending on the rhinitis phenotypes and the age of stratification. A difference existed between children sensitized versus those who were not at the age of 2 years. The greatest incidence of wheeze was seen in children who had atopy without rhinitis (relative risk: 1.70; $P = .007$), whereas the incidence was lower in the nonallergic rhinitis and control groups. In contrast, all 4 rhinitis phenotypes at the age of 5 years tracked proportionally, and the nonallergic rhinitis group showed significantly higher period prevalence than the patients who had atopy without rhinitis. Overall, the probability of wheezing between the ages of 5 and 13 years was significantly increased in children with allergic rhinitis (relative risk: 3.85; $P < .01$). This association was not attributable to the type or severity of sensitization or atopic dermatitis during the first 2 years.

CONCLUSIONS. Allergic rhinitis in the preschool age group was shown to be associated with the onset of wheezing after the age of 5 years.

REVIEWER COMMENTS. On the basis of findings from this study, preschool-aged children with rhinitis might benefit from early assessment of allergic sensitization to identify those who are at high risk of wheezing. Furthermore, identification of these children could lead to targeted treatment and early intervention to prevent asthma in school-aged children.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2011-210700

Sara Anvari, MD
Stacie M. Jones, MD
Little Rock, AR

Allergic Rhinitis as a Predictor for Wheezing Onset in School-aged Children

Sara Anvari and Stacie M. Jones

Pediatrics 2011;128;S116

DOI: 10.1542/peds.2011-210700

Updated Information & Services

including high resolution figures, can be found at:
http://pediatrics.aappublications.org/content/128/Supplement_3/S116

Subspecialty Collections

This article, along with others on similar topics, appears in the following collection(s):
Allergy/Immunology
http://www.aappublications.org/cgi/collection/allergy:immunology_sub

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
<http://www.aappublications.org/site/misc/Permissions.xhtml>

Reprints

Information about ordering reprints can be found online:
<http://www.aappublications.org/site/misc/reprints.xhtml>

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Allergic Rhinitis as a Predictor for Wheezing Onset in School-aged Children

Sara Anvari and Stacie M. Jones

Pediatrics 2011;128;S116

DOI: 10.1542/peds.2011-210700

The online version of this article, along with updated information and services, is located on the World Wide Web at:

http://pediatrics.aappublications.org/content/128/Supplement_3/S116

Pediatrics is the official journal of the American Academy of Pediatrics. A monthly publication, it has been published continuously since 1948. Pediatrics is owned, published, and trademarked by the American Academy of Pediatrics, 141 Northwest Point Boulevard, Elk Grove Village, Illinois, 60007. Copyright © 2011 by the American Academy of Pediatrics. All rights reserved. Print ISSN: 1073-0397.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

