Pediatric Allergic Rhinitis

Chet A. Tharpe, MD, Stephen F. Kemp, MD*

KEYWORDS

• Allergic rhinitis • Conjunctivitis • Concurrent conditions • Avoidance
• Pharmacotherapy • Immunomodulation

KEY POINTS

- Allergic rhinitis significantly affects sleep, cognition, performance, and quality of life.
- Allergic rhinitis is diagnosed clinically based on compatible history and risk factors, characteristic signs and symptoms, and the confirmed presence of allergen-specific immunoglobulin E (if clinically indicated).
- For most patients, allergic rhinitis is a persistent condition that requires years of ongoing management, which combines allergen avoidance strategies and pharmacotherapy, with consideration of allergen immunotherapy for severe or refractory cases.
- Treatment of allergic rhinitis improves concurrent asthma, and allergen immunotherapy might potentially prevent asthma in some children with allergic rhinitis.
- Optimized partnership between patient, caregiver, and health care professional helps to maximize response to allergic rhinitis treatment, while reducing/allaying concerns about safety or therapeutic complications.

INTRODUCTION

Allergic rhinitis (AR) is a chronic immunoglobulin (Ig)E–dependent respiratory disease of the upper airway characterized by rhinorrhea, sneezing, congestion, and/or nasoocular pruritus.[1] Estimates for its prevalence vary regionally and by age group. Several risk factors have been proposed or identified (**Box 1**). The International Study of Asthma and Allergies in Childhood systematically evaluated the prevalence of asthma, allergic rhinoconjunctivitis, and eczema in approximately 1.2 million children in 98 countries and determined the overall prevalence of AR in children aged 6 to 7 years and 13 to 14 years was 8.5% and 14.6%, respectively.[2]

CLINICAL MANIFESTATIONS

AR characteristically presents with paroxysms of rhinorrhea, sneezing, and congestion, often accompanied by pruritus of the eyes, nose, and palate. Postnasal drainage,

Disclosures: The authors have nothing to disclose.
Division of Clinical Immunology and Allergy, Department of Medicine, The University of Mississippi Medical Center, 768 Lakeland Drive, Building LJ, Jackson, MS 39216, USA
* Corresponding author.
E-mail address: skemp@umc.edu

Immunol Allergy Clin N Am 35 (2015) 185–198
http://dx.doi.org/10.1016/j.iac.2014.09.003 **immunology.theclinics.com**
0889-8561/15/$ – see front matter

Box 1
Risk factors for pediatric allergic rhinitis

Family history

Male gender

Firstborn status

Early systemic use of antibiotics

Maternal smoking

Exposure to indoor aeroallergens

Serum IgE greater than 100 IU/mL before age 6 years

Presence of allergen-specific IgE

Data from Wallace DV, Dykewicz MS, Bernstein DI, et al. The diagnosis and management of rhinitis: an updated practice parameter. J Allergy Clin Immunol 2008;122:S1–84; Matheson MC, Dharmage SC, Abramson MJ, et al. Early-life risk factors and incidence of rhinitis: results from the European Community Respiratory Health Study—an international population-based cohort study. J Allergy Clin Immunol 2011;128:816–23; Saulyte J, Regueira C, Montes-Martinez A, et al. Active or passive exposure to tobacco smoking and allergic rhinitis, allergic dermatitis, and food allergy in adults and children: a systematic review and meta-analysis. PLoS Med 2014;11:e1001611.

cough, fatigue, and irritability are other common symptoms.[1,3,4] Of these, nasal congestion is the most common.[5] Young children, however, typically do not blow their noses, but they may instead exhibit repeated sniffing, snorting, throat-clearing, and coughing. Additionally, a palatal click can sometimes be audible if children use their tongues to scratch their itchy palates. Chronic mouth breathing owing to nasal obstruction in children with AR has been linked to facial abnormalities and an increased incidence of dental malocclusions and snoring.[6,7]

COGNITIVE FUNCTION AND QUALITY OF LIFE

Sleep-disordered breathing, fatigue, and generalized malaise are important sequelae of undertreated AR.[5,8,9] Irritability and behavioral issues are often seen as a result of AR in children.[9,10] Children with AR are more likely to have emotional and social complications.[5]

AR can also impair cognitive functioning and academic performance.[5,11,12] Sedating antihistamines can be unintentional cofactors.[13] Complications of AR such as sleep disorders and eustachian tube dysfunction with associated conductive hearing loss likely contribute to learning impairment.[14]

CONCURRENT CONDITIONS

AR occurs in association with several other diseases, including asthma, allergic conjunctivitis, and sinusitis.

Asthma

Asthma and rhinitis often coexist and are believed to represent a spectrum of the same disease entity. Rhinitis is correlated with and is a risk factor for the occurrence and severity of asthma. Up to 50% of individuals with chronic rhinitis have asthma. Conversely, most individuals with asthma also have chronic rhinitis.[15] Accordingly, expert panels recommend that patients with AR should be evaluated for asthma and vice versa, and, if identified, the 2 conditions should be treated concurrently.[15,16]