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New Perspectives on Pediatric Allergic Rhinitis

Allergic rhinitis: Definition, epidemiology, pathophysiology, detection, and diagnosis

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Abstract

Allergic rhinitis (AR) is a heterogeneous disorder that despite its high prevalence is often undiagnosed. It is characterized by one or more symptoms including sneezing, itching, nasal congestion, and rhinorrhea. Many causative agents have been linked to AR including pollens, molds, dust mites, and animal dander. Seasonal allergic rhinitis (SAR) is fairly easy to identify because of the rapid and reproducible onset and offset of symptoms in association with pollen exposure. Perennial AR is often more difficult to detect than SAR because of the overlap with sinusitis, respiratory infections, and vasomotor rhinitis. SAR can result in hyperresponsiveness to allergens such as cigarette smoke, once pollen season is over. Perennial AR is defined as occurring during approximately 9 months of the year. AR affects an estimated 20 to 40 million people in the United States alone, and the incidence is increasing; an estimated 20% of cases are SAR; 40% of cases are

perennial rhinitis; and 40% of cases are mixed. The pathophysiology of SAR is complex. There is a strong genetic component to the allergic response, which is driven through mucosal infiltration and action on plasma cells, mast cells, and eosinophils. The allergic response occurs in two phases, which are considered the "early" and "late" phase responses. Early phase response occurs within minutes of exposure to the allergen and tends to produce sneezing, itching, and clear rhinorrhea; late phase response occurs 4 to 8 hours after allergen exposure and is characterized by congestion, fatigue, malaise, irritability, and possibly neurocognitive deficits. The key to diagnosis of AR is awareness of signs and symptoms. IgE antibody tests to detect specific allergens are the standard method used today; however, in addition, diagnosis must be confirmed with a positive history and demonstration that the symptoms are the result of IgE-mediated inflammation. (J Allergy Clin Immunol 2001;108:S2-8.)



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Keywords

Allergic rhinitis; IgE; mast cells; perennial rhinitis

Abbreviations

AR: , Allergic rhinitis; IL: , Interleukin; IgE: , Gamma globulin E; LT: , Leukotriene; PAR: , Perennial allergic rhinitis; SAR: , Seasonal allergic rhinitis; T_H2: , T helper lymphocyte 2

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