

Allergic and nonallergic rhinitis

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Allergic rhinitis (AR) which is one of the most common chronic allergic diseases represents a significant healthcare burden with serious adverse effects on individual quality of life. AR can be defined as collection of symptoms (itching, sneezing, rhinorrhea, and nasal obstruction) that develop by an inflammation of the nasal mucosa caused by IgE mediated allergic reaction to air-borne allergens. The global prevalence of AR is between 10 and 30 % for adults and as high as 40 % for children. The prevalence is still increasing as societies are becoming more industrialized. Epidemiologic studies have consistently demonstrated that AR and asthma commonly coexist

In AR, clinical examination of the nasal cavity by endoscope demonstrates a pale/hyperemic swollen mucosa. The diagnosis of AR requires a positive symptomatic history, demonstration of allergic sensitization which is defined as skin prick tests positivity or detection of serum specific IgE, and correlation between the symptom and test findings. Other diagnostic markers are being developed such as exhaled nitric oxide, microRNA and inflammatory cytokines. AR can occur throughout the year (perennially) or in particular seasons (seasonally) and it is linked to some comorbidities such as allergic conjunctivitis, asthma, otitis media with effusion and nasal polyps, besides atopic eczema.

According to the ARIA classification AR may also be classified as Mild-Intermittent, Moderate-Severe intermittent, Mild-Persistent, and Moderate-Severe Persistent. Intermittent is when the symptoms occur <4 days per week or <4 consecutive weeks. Persistent is when symptoms occur >4 days/week and >4 consecutive weeks. The symptoms are considered mild when there was no impairment of Health-Related Quality of Life items (sleep, daily activities, work/school performance, troublesome symptoms) and moderate/severe when items were compromised.

Treatment of AR includes allergen avoidance, antihistamines (oral and intranasal), intranasal corticosteroids, intranasal cromones, leukotriene receptor antagonists, and immunotherapy. Occasional systemic corticosteroids and decongestants (oral and topical) are also used. Several recommendations have been put

forth for a stepwise treatment strategy for AR. In contrast to medication, immunotherapy also provides the benefit of inducing allergen tolerance, which results in long-lasting symptom relief for up to several years after treatment is completed. Promising advances are expected in the fields of immunotherapy, monoclonal antibody and other therapeutic targets with the purpose of modifying the immune response.

Nonallergic rhinitis (NAR) is defined as nasal symptoms occurring in response to nonspecific, nonallergic irritants. It is usually also diagnosed based on history. Lack of a clinical response to treatment for assumed allergic rhinitis and negative results on skin tests and/or an allergen-specific serum IgE test also suggest a nonallergic cause. NAR has 8 major subtypes which includes vasomotor rhinitis, NAR with eosinophilia, atrophic rhinitis, senile rhinitis, gustatory rhinitis, drug-induced rhinitis, hormonal-induced rhinitis, and cerebral spinal fluid leak. Local allergic rhinitis is a recently identified phenotype of rhinitis which shows discrepancy between the nasal symptomatology and the absence of markers of systemic atopy. These patients were previously classified as affected by NAR.

A cardinal aspect of treating NAR is inherent difficulties in diagnosis and classification, due to its heterogeneity. Thus, optimal treatment can vary significantly. Lifestyle modifications can be the treatment of choice in several subtypes (e.g., occupational or gustatory rhinitis), whereas other subtypes respond very well to intranasal corticosteroids (e.g., non-allergic rhinitis with eosinophilia), intranasal antihistamines. Topical anticholinergics such as ipratropium bromide nasal spray are effective in treating rhinorrhea symptoms. Adjunct therapy includes decongestants and nasal saline

In this year-in-review presentation, we will review the advances on allergic rhinitis and non-allergic rhinitis in the aspect of certain domains composed of epidemiology, classification, pathophysiology, diagnostic test including new predictive biomarkers, and therapeutic approaches such as pharmacologic management and immunotherapy, based on recently published articles on 2016.