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Allergy International

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Invited review article

Japanese guidelines for allergic rhinitis 2017[☆]

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ARTICLE INFO

Article history:

Received 2 September 2016

Available online 15 February 2017

Keywords:

Allergen immunotherapy

Mechanism

Pharmacotherapy

Pollinosis

Surgery

ABSTRACT

Like asthma and atopic dermatitis, allergic rhinitis is an allergic disease, but of the three, it is the only type I allergic disease. Allergic rhinitis includes pollinosis, which is intractable and reduces quality of life (QOL) when it becomes severe. A guideline is needed to understand allergic rhinitis and to use this knowledge to develop a treatment plan. In Japan, the first guideline was prepared after a symposium held by the Japanese Society of Allergy in 1993. The current 8th edition was published in 2016, and is widely used today.

To incorporate evidence based medicine (EBM) introduced from abroad, the most recent collection of evidence/literature was supplemented to the Practical Guideline for the Management of Allergic Rhinitis in Japan 2016. The revised guideline includes assessment of diagnosis/treatment and prescriptions for children and pregnant women, for broad clinical applications. An evidence-based step-by-step strategy for treatment is also described. In addition, the QOL concept and cost benefit analyses are also addressed. Along with Allergic Rhinitis and its Impact of Asthma (ARIA), this guideline is widely used for various clinical purposes, such as measures for patients with sinusitis, childhood allergic rhinitis, oral allergy syndrome, and anaphylaxis and for pregnant women. A Q&A section regarding allergic rhinitis in Japan was added to the end of this guideline.

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1. Definition and disease names

Allergic rhinitis is a type I allergic disease of the nasal mucosa, characterized by paroxysmal repetitive sneezing, watery rhinorrhea, and nasal blockage. The disease names, most commonly used in publications, include allergic rhinitis, nasal allergy, nasal hypersensitivity, and pollinosis. Allergic rhinitis is classified into perennial and seasonal compared to ARIA guideline. Pollinosis is seasonal

allergic rhinitis caused by pollen antigens, frequently complicated by allergic conjunctivitis.¹

2. Classification of rhinitis

Rhinitis generally indicates nasal mucosal inflammation (Table 1). Histopathologically, nasal mucosal inflammation is an exudative inflammation. Suppurative and allergic inflammation are particularly common. Both are characterized by leakage of serum components from vessels, edema, cell infiltration, and hypersecretion.

Infectious rhinitis is classified into acute and chronic rhinitis. Hyperesthetic non-infectious rhinitis, that is nasal hypersensitivity complicated by sneezing and watery rhinorrhea, or all nasal symptoms including sneezing, watery rhinorrhea, and nasal

[☆] This article is an updated version of “Japanese guideline for allergic rhinitis 2014” published in *Allergol Int* 2014;63:357–75.

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Peer review under responsibility of Japanese Society of Allergy.

Table 1
Classification of rhinitis.

1. Infection
a. Acute
b. Chronic
2. Hyperesthetic non-infectious rhinitis
a. Combined type (nasal hypersensitivity)
i) Allergic: perennial rhinitis, seasonal rhinitis
ii) Nonallergic: vasomotor (idiopathic) rhinitis, rhinitis with eosinophilia syndrome
b. Rhinorrhea type: gustatory rhinitis, cold inhalation rhinitis, senile rhinitis
c. Congestive type: medicament rhinitis, psychogenic rhinitis, pregnant rhinopathy, hormonal rhinitis, and cold rhinitis
d. Dry type: dry nose
3. Irritant rhinitis
a. Physical
b. Chemical
c. Radiation
4. Others
a. Atrophic rhinitis
b. Specific granulomatous rhinitis

The hyperesthetic non-infectious rhinitis is characterized by hypersensitivity. However, this is not inflammatory, except for the allergic rhinitis. Thus, this should reasonably be eliminated from the classification of rhinitis and regarded as a disease similar to allergy or hypersensitivity diseases. However, this was placed into this classification in view of potential clinical convenience. Vasomotor rhinitis is called an idiopathic rhinitis in international classification. This term was used according to the practices. The conditions listed in 4a and 4b should be classified under chronic rhinitis in 1b. However, they were separately classified because of the small number of cases.

Adapted from reference.¹

blockade, is classified into allergic and nonallergic rhinitis. Nonallergic rhinitis includes vasomotor rhinitis and rhinitis with eosinophilia syndrome. Vasomotor rhinitis is symptomatically similar to allergic rhinitis. However, it cannot be identified as an allergy by tests. The major cause of vasomotor rhinitis is dysautonomia of the nasal mucosa. However, this definition is not recognized in international classification and vasomotor rhinitis is classified as idiopathic rhinitis.² Rhinitis with eosinophilia syndrome is characterized by nasal discharge eosinophilia, and other negative allergy tests.³

Noninfectious, nonallergic rhinitis also includes rhinorrhea, congestive, and dry types. Rhinorrhea types include gustatory rhinitis. Congestive types include medicament rhinitis and psychogenic rhinitis, pregnant rhinopathy, hormonal rhinitis, and cold rhinitis. Medicament rhinitis is caused by the long-term administration of sympathomimetics, vasodilatory antihypertensives, β -stimulatory antihypertensives, bronchodilators, antidepressants, or contraceptive pills. However, the most common cause is the overuse and overdose of sympathomimetic nose drops prescribed for nasal blockage.⁴

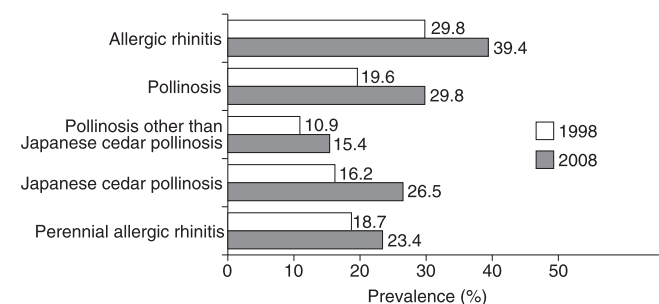


Fig. 1. Prevalence in 1998 and 2008.
Adapted from reference.¹

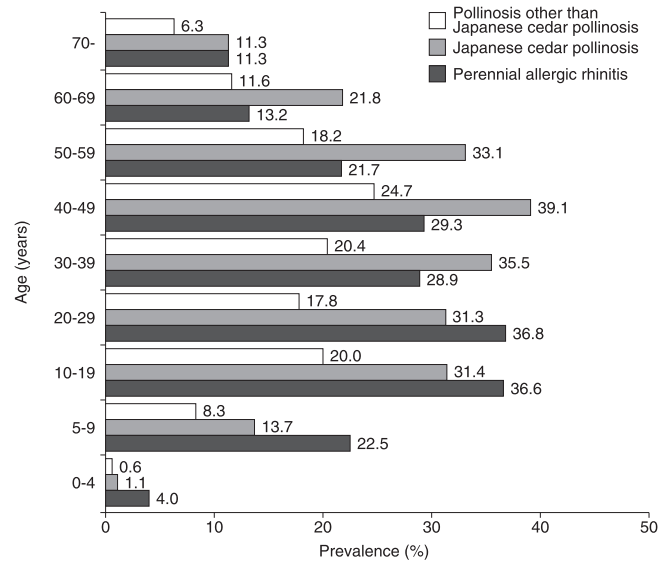


Fig. 2. Prevalence by age.
Adapted from reference.¹

3. Epidemiology of allergic rhinitis

The number of patients with allergic rhinitis, particularly common sinusitis, has decreased since the 1960s. In contrast, the number of patients with allergic rhinitis has increased. Recently, the number of patients with pollinosis, particularly with Japanese cedar pollinosis, has markedly increased. An epidemiological study revealed a marked increase in the prevalence of allergic rhinitis between 1998 and 2008 (Fig. 1).⁵ In particular, the number of patients with Japanese cedar pollinosis has increased. Data on prevalence by age shows that perennial allergic rhinitis is common among young people and that Japanese cedar pollinosis is common among middle-aged people (Fig. 2). According to the International Study of Asthma and Allergies in Childhood (ISAAC), the prevalence in Japan is at a medium level in the world (Fig. 3).⁶

4. Pathogenic mechanisms of allergic rhinitis (Fig. 4)

There are various diatheses for allergic rhinitis sensitization, but their mechanisms remain largely unknown. Genetic factors and diatheses for IgE antibody production are the most important. In response to antigen entry into the mucous membrane, IgE antibodies are produced in the nasal mucosa and regional lymphatic tissues. Most causative antigens are inhalation antigens, such as Dermatophagoides (a major antigen in house dust), pollens (trees, grasses, and weeds), fungi, and pets. Of these, Dermatophagoides and pollens are most common.

In sensitized individuals, antigens inhaled through the nasal mucosa pass through the nasal mucosal epithelial cells to bind to IgE antibodies on mast cells distributed over the nasal mucosa. In response to an antigen-antibody reaction, chemical mediators, such as histamine and peptide leukotrienes (LTs), are released from mast cells. These irritate the sensory nerve endings and blood vessels of the nasal mucosa to cause sneezing, watery rhinorrhea, and nasal mucosal swelling (nasal blockage). This is an early phase reaction. Various inflammatory cells, such as activated eosinophils, infiltrate into the nasal mucosa exposed to antigens in response to cytokines, chemical mediators, and chemokines. Leukotrienes, produced by these inflammatory cells, cause nasal

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