

# Cold/flu or allergic rhinitis?

## No sneezing matter

### Introduction

Allergic rhinitis (AR) is a very common disorder and is set to increase in South Africa as rural communities move into urban environments. A recent allergy survey among young children, under the age of 3 years, in the City of Cape Town showed 1 in 4 had clinical signs of AR, while their rural counterparts showed little signs of sensitisation.<sup>1</sup>

AR is a widely experienced IgE-mediated condition, characterised by inflammation of the nasal mucosa with nasal hyperreactivity, nasal congestion, anterior and posterior rhinorrhoea, sneezing and/or nasal itching. This condition is strongly linked to asthma, with 10-40% of patients with AR having asthma.<sup>2</sup>

### KEY MESSAGES

- AR is linked strongly with asthma and conjunctivitis
- Allergen skin testing is the best diagnostic test to confirm AR
- Intranasal corticosteroids are the mainstay of treatment for most patients that present to physicians with AR
- Allergen immunotherapy is an effective immune-modulating treatment that should be recommended if pharmacologic therapy for AR is not effective or is not tolerated.

### Pathophysiology of AR

In susceptible individuals, exposure to allergic proteins causes sensitisation and production of specific IgE that is present on the surface of mast cells and basophils in the nasal mucosa (Figure 1).

During subsequent exposure, this sensitisation leads to clinical disease in susceptible individuals. The binding of an allergen to IgE causes release of mediators including histamine, prostaglandins

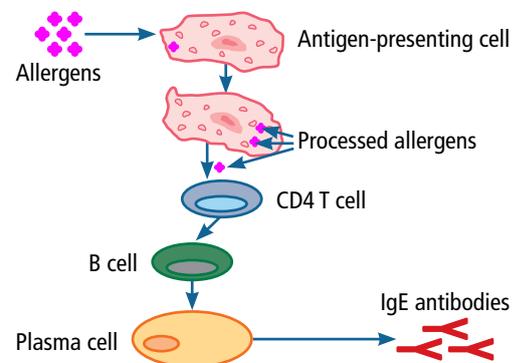


Figure 1. Pathophysiology. Phase 1: Sensitisation

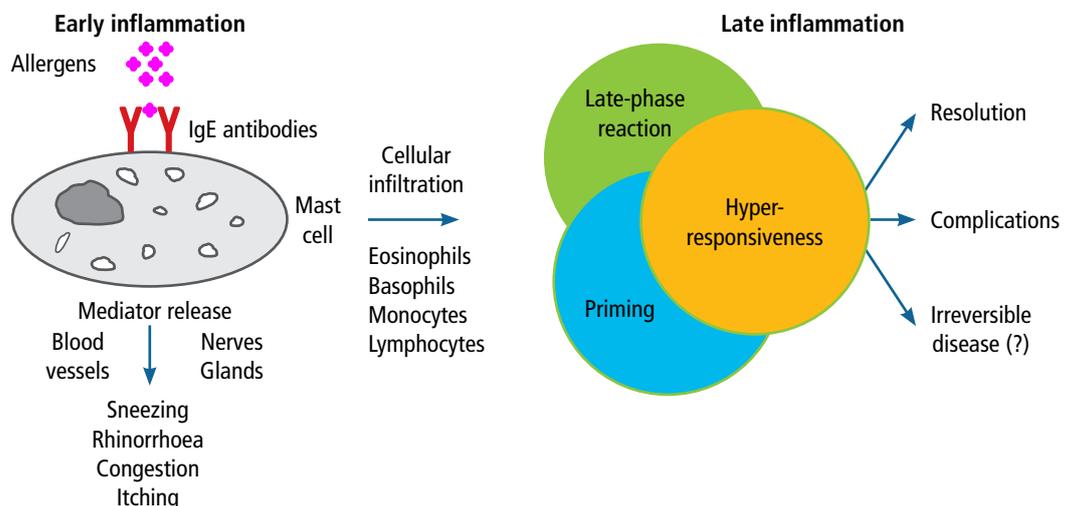


Figure 2. Early and late inflammation leads to clinical disease

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and leukotrienes. This early inflammatory reaction is associated with activation of mucous glands, increased vascular permeability, vasodilation, stimulation of sensory nerves and rapid onset of symptoms within 30 minutes. These symptoms include sneezing, rhinorrhoea, congestion, itching, ocular redness and tearing (Figure 2).

## Classification of types of AR

Traditionally, rhinitis was classified as seasonal or perennial, occurring throughout the year. The Allergic Rhinitis and its Impact on Asthma (ARIA) Guidelines took a different approach in 2008<sup>3</sup> and have kept this definition throughout its latest revision, which was released in 2016.<sup>4</sup> The current practical classification is based on symptom duration and severity (Figure 3).<sup>3,5</sup> It is important to note that South African guidelines follow this approach and note that moderate-to-severe AR is the commonest form seen by clinicians in South Africa.<sup>6</sup>

## Diagnosis of AR

AR is usually a long-standing condition that may never be discussed in the primary care setting as patients do not recognise the real impact of the condition on their quality of life. Screening for AR is recommended particularly in asthmatic patients, since studies have shown that rhinitis is present in up to 95% of patients with asthma.

Diagnosis is based on a clinical history of typical symptoms and careful examination. In patients with a clinical diagnosis of AR who do not respond to treatment, or when the diagnosis is uncertain, or when knowledge of the specific causative allergen is required to target therapy, diagnostic tests such as skin tests or blood tests for specific IgE should be performed. Measurement of total IgE is not helpful.<sup>2,3</sup>

Symptoms that are not associated with AR should prompt further assessment and referral to relevant specialities (Table 1).

Physical examination is usually relatively normal. There may be clear rhinorrhoea and ocular symptoms (watery discharge, swollen conjunctivae and erythema).<sup>2</sup> In those with chronic or more severe AR, dark circles may be present around the eyes (allergic shiners) caused by accumulation of blood and other fluid

Over the following 4-8 hours, the mediators trigger a further late inflammatory response which results in recurrent symptoms, nasal congestion and mucous production which may last for days.

Treatment aims to address symptoms, stop the inflammatory response and avoid possible irreversible disease.

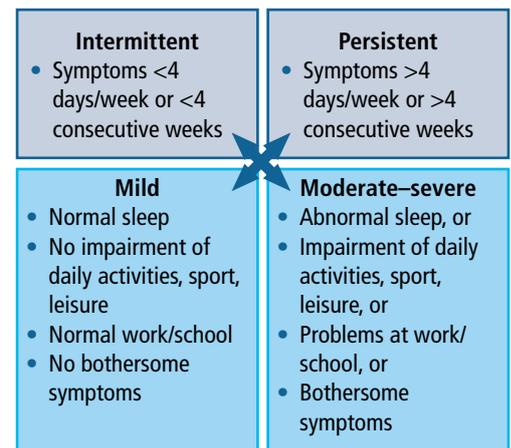


Figure 3. Classification of AR according to symptom duration and severity<sup>3,5</sup>

in the infraorbital groove consequent on venous stasis.<sup>8</sup> In children, obstructed breathing may be associated with visible features, such as gaping mouth, chapped lips, hypertrophied gingival mucosa, long face and dental malocclusion. There may also be a nasal crease.

Intranasal examination (anterior rhinoscopy) may reveal pale, boggy turbinates, but is often normal. Nasal polyps are uncommon in children and if present they should prompt further evaluation for cystic fibrosis. Cobblestoning of the back

Table 1. Symptoms not associated with AR or allergic conjunctivitis<sup>3</sup>

Nasal symptoms	Eye symptoms
• Nasal obstruction without other symptoms	• Unilateral eye symptoms
• Mucopurulent rhinorrhoea	• Eye burning, but not itching
• Posterior rhinorrhoea (post-nasal drip) with thick mucous and/or no anterior rhinorrhoea	• Dry eyes
• Pain	• Photophobia
• Recurrent epistaxis	
• Anosmia	

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of the throat indicates postnasal drip. Nasal endoscopy may be considered in patients with treatment failure.

## Treatment of AR

The main treatment goal for AR is to achieve symptom relief. This simplified, stepwise algorithm may be helpful (Figure 4).

### Allergen avoidance

The first-line treatment involves introducing avoidance strategies if the aero-allergen is known. This is more difficult to achieve than simply stated and may be cost-ineffective and insufficient to achieve resolution of clinical symptoms. However, for sensitive patients, practical steps to avoid indoor moulds and exposure to household pets and outdoor activities during peak pollen seasons can be helpful.

### Pharmacotherapy

#### Oral antihistamines

Second generation oral antihistamines are recommended for milder, seasonal AR and are effective to reduce sneezing, itching and rhinorrhoea when taken

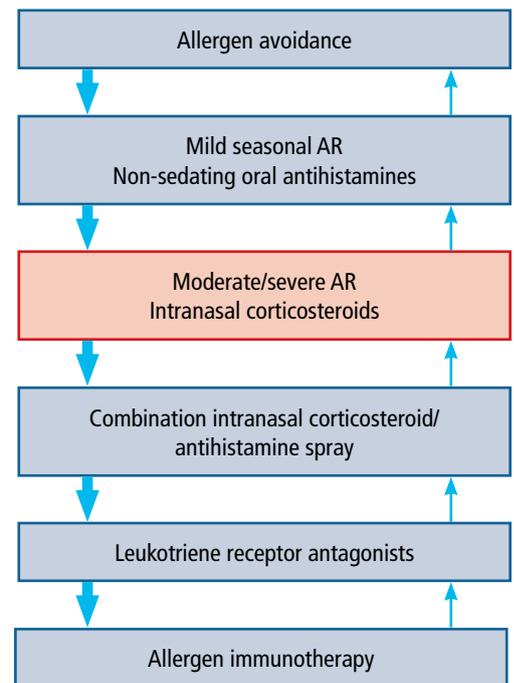


Figure 4. Stepwise algorithm for the treatment of allergic rhinitis.<sup>5</sup> Treatments can be used individually or in any combination

regularly at the time of maximal symptoms or before exposure to a known allergen (Table 2).<sup>5</sup>

Table 2. Overview of suitable oral antihistamines (second generation) for AR therapy<sup>5</sup>

	Usual adult dose	Usual paediatric dose
Cetirizine	1–2 tablets (5mg) once daily 1 tablet (10mg) once daily	5–10mL (1–2 teaspoons) once daily (children's formulation)
Desloratadine	1 tablet (5mg) once daily	2.5–5mL (0.5–1.0 teaspoon) once daily (children's formulation)
Fexofenadine	1 tablet (120mg) once daily (24-h formulation) Also available as 180mg	Not currently indicated for children <12 years of age
Loratadine	1 tablet (10mg) once daily	5–10mL (1–2 teaspoons) once daily (children's formulation)

Amended from Small P *et al.*<sup>5</sup>

#### Intranasal corticosteroids (INCSs)

INCSs are first-line therapeutic options for patients with persistent and moderate/severe symptoms. They can be used alone or in combination with oral antihistamines.

When used regularly and correctly, INCSs effectively reduce inflammation of the nasal mucosa and improve mucosal pathology. These medications relieve nasal congestion and rhinorrhoea,

improve ocular symptoms and reduce lower airways symptoms. Education on how to use the metered spray is essential.

INCSs are the most effective medication for AR. All of the formulations are similarly effective and they are generally well tolerated. Occasional epistaxis does occur but responds well to temporary discontinuation or lowering or dividing the dose. For patients with severe nasal

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blockage, a decongestant nasal spray may be administered shortly before the ICNS

for the first few days of therapy, but not for longer than 10 days (Table 3).

**Table 3. Overview of suitable INCSs for AR therapy<sup>5</sup>**

	Usual adult dose	Usual paediatric dose
Beclomethasone	1–2 sprays (50µg/spray) EN, twice daily	1 spray (50µg/spray) EN, twice daily
Budesonide	2 sprays (64µg/spray) EN, once daily or 1 spray EN, twice daily	2 sprays (64µg/spray) EN, once daily or 1 spray EN, twice daily (do not exceed 256µg)
Ciclesonide	2 sprays (50µg/spray) EN, once daily	Not indicated for children <12 years of age
Fluticasone propionate	2 sprays (50µg/spray) EN, once daily or Every 12h (for severe rhinitis)	1–2 sprays (50µg/spray) EN, once daily
Mometasone furoate	2 sprays (50µg/spray) EN, once daily	1 spray (50µg/spray) EN, once daily
Triamcinolone acetonide	2 sprays (55µg/spray) EN, once daily	1 spray (55µg/spray) EN, once daily

EN: each nostril

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### Oral leukotriene receptor antagonists (LTRAs)

Because they are less effective than INCSs, the oral LTRAs are not routinely recommended as primary therapy for patients

with AR. They may be helpful in patients with AR and comorbid asthma.<sup>7</sup>

### Combination therapy

Combination therapy is recommended in patients with an inadequate response to monotherapy.

The most effective addition to an INCS is an intranasal antihistamine. Oral antihistamines and LTRAs confer

no additional benefit with an INCS and these combinations are not recommended. Some patients may benefit from the combination of an oral antihistamine and oral decongestant.<sup>7</sup>

### Immunotherapy

Immunotherapy may be helpful in patients with AR whose symptoms respond inadequately to pharmacotherapy, with

or without environmental controls.<sup>7</sup> Immunotherapy is not a substitute for allergen avoidance.

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