

# Allergic rhinitis in South African children: There is something new in the air.

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## Introduction

Upper respiratory tract symptoms and problems are both common and troublesome in infants and children. Young children get a number of viral upper respiratory tract infections per year, although the symptoms are frequently allergic in origin. This article will address some of the new, as well as the often forgotten, issues in the understanding of allergic rhinitis, especially in children and infants, and particularly in South Africa, where unique situations exist with regard to this disease.

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### Definition and prevalence

In 2001, a committee of prominent allergists published a revised nomenclature for allergic diseases, including a definition of rhinitis (both allergic rhinitis and rhinitis due to other causes), which has both intermittent and persistent expressions.<sup>1</sup> This document also classified allergy into both IgE-mediated and non-IgE-mediated allergy and defined it as 'a hypersensitivity reaction initiated by immunological mechanisms'. This document provided allergists with a standardised nomenclature for allergy and, within that, for allergic rhinitis. To extend these definitions further, it can be said that rhinitis is a pathological term meaning 'inflammation of the lining of the nose'.<sup>2</sup> Importantly, this is a *clinical diagnosis*, relying on characteristic clinical features, including rhinorrhoea, itch and sneezing (runners or sneezers), and nasal congestion (blockers). This particular classification was introduced in the mid-1990s by the International Rhinitis Working Group.<sup>2</sup> It is also worth emphasising that nasal congestion is a prominent feature of perennial or persistent allergic rhinitis, and is responsible for significant clinical manifestations, complications and costs of the disease.

The expression of allergic rhinitis in South Africa is mainly that of a persistent disease, especially on the Highveld of the country. The reason for this is that seasonal allergens, in the form of grass pollens, are present for significant periods of time in the atmosphere of this area.<sup>3,4</sup> The ISAAC

(International Study of Asthma and Allergy in Children) study was published recently.<sup>5</sup> This study measured the prevalence of allergic diseases, including allergic rhinitis, in many countries around the world. In South Africa, the prevalence of this condition was 16% - 17% (of 13- to 14-year-old children), making it the most common chronic condition in children.

Allergic rhinitis, like other allergic conditions, is on the increase around the world. A number of reasons have been postulated for this, and a commonly cited cause is atmospheric pollution. However, the most likely explanation for the rising prevalence is postulated in the form of the 'hygiene hypothesis'.<sup>6</sup> This hypothesis states that, as a result of a reduction in natural infections in young children due to the improvement of public health and hygiene, the earlier use of antibiotics, smaller family sizes and urbanised living, the infectious trigger of the immune system to produce TH<sub>1</sub> lymphocytes is absent and the immune system swings into a TH<sub>2</sub> lymphocyte-dominated system, which produces the cytokines characteristic of allergic diseases.

### Diagnosis

Allergic rhinitis is largely a clinical diagnosis. However, a high index of suspicion needs to be retained, as many patients and parents do not complain of the direct symptoms of this disease. More important are the indirect features as a result of ongoing nasal congestion, a hangdog or tired

facial expression, characteristic mouth breathing, allergic shiners or dark rings beneath the eyes, nasal crease and a watery nasal discharge (see Figure 1). Allergy diagnostic testing usually requires no more than skin-prick testing. Skin-prick testing to common aero-allergens, such as grass pollen, tree pollen, house dust mite, cat and dog, is usually sufficient, and extensive skin-prick testing is generally not required. Specialised laboratory testing

Figure 1: The Allergic Facies



is seldom required if a clinical diagnosis followed by skin-prick testing is employed. Allergy testing in the form of laboratory testing needs to be undertaken in a cost-effective way and it is seldom that extensive RAST testing is required to make a diagnosis of allergic rhinitis.

**Complications**

Very significant in allergic rhinitis are the complications of the disease, especially the complications of persistent allergic rhinitis. Complications often relate to other areas of the respiratory tract, including the middle ear space, producing an otitis media with effusion, and the sinus cavities, producing both chronic sinusitis and episodic infective acute sinusitis. The long-face syndrome, with dental malocclusions, and the associated impaired quality of life are very real and significant complications of this disease.<sup>7</sup>

Probably the most important complication of allergic rhinitis is asthma. Up to 40% of asthma sufferers have allergic rhinitis as a cause of associated nasal symptoms (although nasal symptoms occur in the majority).<sup>8</sup> Asthma therefore has a very real association with allergic rhinitis. There have been a number of proposed interactive theories for the association between allergic rhinitis and asthma. Aspiration of inflammatory secretions from the upper airway down into the chest is a theory that was proposed in the eloquent work done by Phillip Bardin in the Western Cape.<sup>9</sup> The nasobronchial reflex was also postulated for many years to be the link between the upper and lower airway, but no evidence for this has been found.<sup>10</sup> Mouth breathing is clearly present in individuals with a persistent blocked nose and this may result in the inspiration of poorly humidified air and the inhalation of greater quantities of allergens. However, the most likely explanation for the connection between upper and lower airway disease relates to the fact that these are expressions of a systemically mediated condition.<sup>11</sup>

We have realised of late that a very real complication of allergic rhinitis is an impaired quality of life, so much so that the quality of life of an individual with allergic rhinitis is often as severely impacted upon as having severe asthma.<sup>12</sup> This is very important at a paediatric level. School performance is impacted upon by poor sleep.<sup>13</sup> It is obvious that if allergic rhinitis and asthma both impact on quality of life, having both diseases, which occurs

in a large number of patients, is going to impact that much more on the quality of life of the individual.<sup>14</sup>

**Treatment**

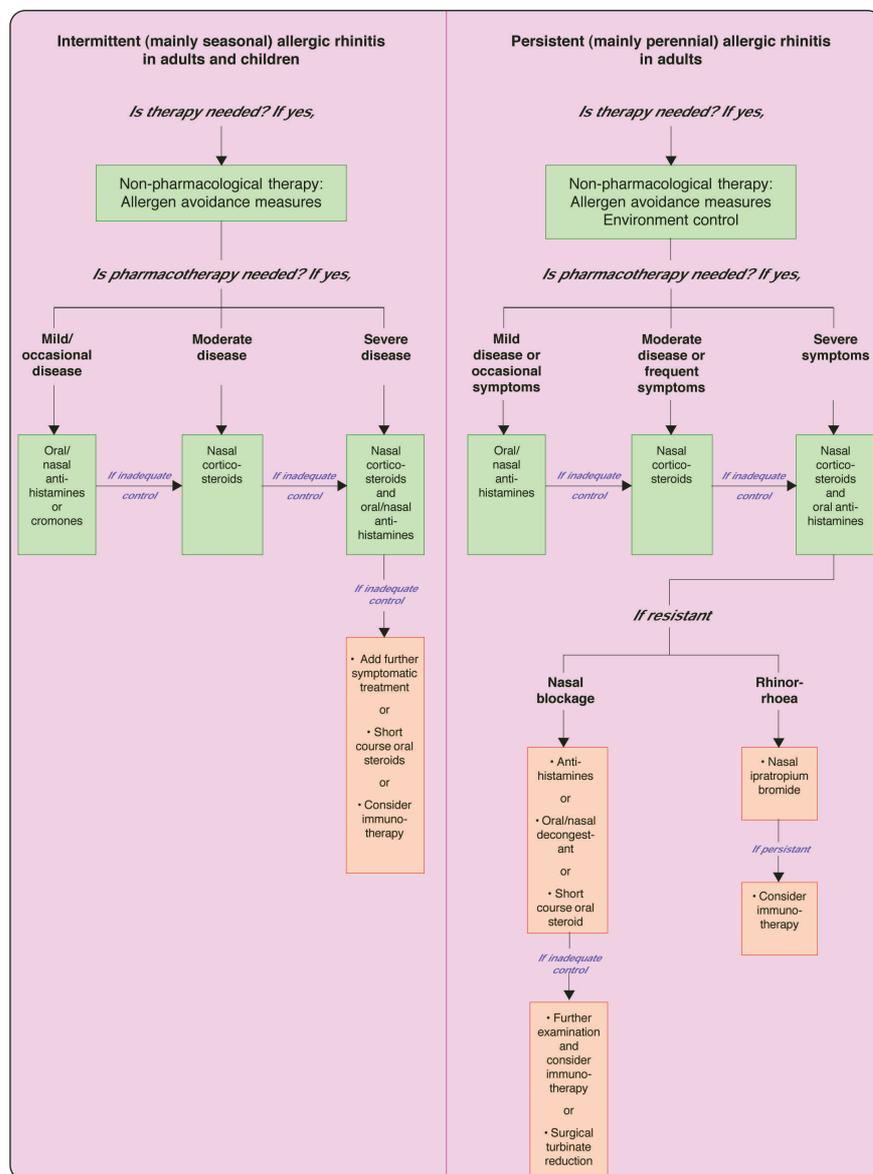
In 1996, the South African Allergic Rhinitis Working Group published a document dealing with the clinical expression, complications and management of this disease.<sup>2</sup> Topical nasal corticosteroids form the mainstay of the treatment of persistent allergic rhinitis, especially the more moderate and severe forms of this disease. Topical nasal corticosteroids are safe to use in the long term, even in young children.

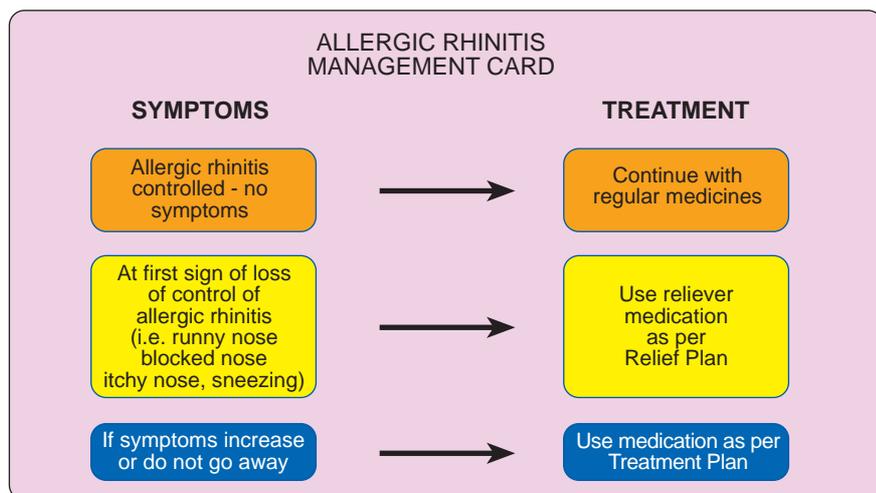
There is a significant place in the management of allergic rhinitis for the use of oral antihistamines, especially

newer-generation antihistamines, which are non-sedating and long acting. The recently published Gloria Guidelines state the exact role for antihistamines in both persistent and intermittent disease (see Figure 2).<sup>15</sup> The South African Allergic Rhinitis Working Group document states that the use of antihistamines in the treatment of allergic rhinitis, whether short term or long term, needs to focus on the second and new generation oral antihistamines that do not carry the risk of sedation (which simply exaggerates the impact on quality of life) or tachyphylaxis.

Desloratadine, levocetirizine and fexofenadine are more than just antihistamines. They carry anti-allergic and anti-inflammatory properties,

**Figure 2: The GLORIA Guidelines for treatment of allergic rhinitis**



**Figure 3:** Management Card for Allergic Rhinitis

which translate into significant advances in the therapeutic classification of the antihistamines. The advantages of these agents are many, such as their oral activity, their non-sedating effect, their greater potency and their favourable safety profile. They are rapidly acting oral antihistamines with an extended half-life.<sup>16</sup> The most important advantage of these preparations, however, is probably their ability to treat nasal congestion or stuffiness.<sup>17</sup>

The Allergic Rhinitis Working Group deals with the management of acute symptoms. It should be stressed that acute symptoms may imply the flare-up of background disease that was previously well controlled or, and probably more importantly, the newly diagnosed patient who has had longstanding uncontrolled symptoms. Acute therapy really means the application of a topical or oral decongestant and a newer generation antihistamine for control. It is worth noting that not all nasal decongestants are equal. Imidazole-containing drugs are preferable because of their favourable safety profile. It should also be remembered that the phenylephrine group is banned for use by people involved in competitive sport. Unfortunately, no therapy is registered for chronic use in infants in whom troublesome symptoms of allergic rhinitis may be present. In this case, it could be useful to consider saline solutions.

A systemically-active anti-allergenic and anti-inflammatory drug

would have some effect on the other expression of inflammatory airway disease, namely asthma, and the use of inhaled B<sub>2</sub>-agonists for asthma is significantly reduced when desloratadine is used.<sup>18</sup> In addition, total asthma symptom scores are reduced in asthmatics who are using desloratadine for the control of allergic rhinitis.<sup>19</sup>

The management of allergic rhinitis needs a step-wise approach, similar to the management of asthma, and the use of a management card is proposed. One of the pages of the management card deals with regular medicines (including topical corticosteroids or antihistamine for milder symptoms). The card also contains a plan for occasional symptoms and an action plan for dealing with persistent uncontrolled symptoms. Doctors should be encouraged to give this card to patients (see Figure 3).

### Conclusion

Allergic rhinitis is common in South African children. The diagnosis rests on a classic clinical picture and a simple, cost-effective test to prove allergy. Symptoms in South African patients are usually persistent and give rise to important complications, as well as high costs. The treatment of chronic disease differs from that of acute and newly diagnosed disease and it is worth remembering that newly diagnosed disease often requires an intervention step before regular therapy is prescribed. The treatment

of persistent allergic rhinitis may require a new-generation antihistamine for the more mild forms of the disease, and certainly as an add-on therapy for minor exacerbations. Allergic rhinitis, finally, is a cause of significant sequelae, which are important in their own right and also an important cost driver for the health economy of our country.✎

**See CPD Questionnaire, page ??**

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