

# Opinion

## Management of allergic rhinitis in primary care

### Introduction

Rhinitis is a common problem in western societies, affecting approximately 24% of the UK adult population. Symptoms include a runny and/or blocked nose, sneezing, itching, and sometimes postnasal drip or conjunctivitis, occurring for an hour or more on most days. Although often trivialised by health professionals, symptoms can be disruptive, debilitating and can limit significantly activities of daily living. Inexpensive and effective treatments are available, although successful management depends on identification of avoidable triggers and adherence to pharmacotherapy.

Rhinitis is a risk factor for the development of asthma, is found in most asthma patients, and is a frequent trigger of asthma exacerbations. Other co-morbidities include sinusitis, sleep problems, and otitis media with effusion.

### Differential diagnosis of rhinitis

There are many causes of rhinitis, but for simplicity they can be broadly grouped under the headings of allergic and non-allergic rhinitis. Their symptoms are similar, but allergic rhinitis is characterised by sneezing and itching, whereas the commonest symptoms in non-allergic rhinitis are nasal blockage and rhinorrhoea. Allergic rhinitis is the most common form of rhinitis and affects over 20% of the UK population. It can range in severity, from being mild and manageable to being debilitating and severe, affecting quality of life, productivity and exam performance.<sup>1,2</sup> Allergic rhinitis can often be diagnosed from the clinical history but can be confirmed by specific diagnostic tests when necessary – i.e. to confirm suitability for immunotherapy or to identify an avoidable trigger.

- **Non-allergic rhinitis** has a variety of causes, both inflammatory and non-inflammatory. It may be eosinophilic and steroid responsive, and, rarely, can be a presenting complaint for systemic disorders such as Wegener's granulomatosis, Churg-Strauss syndrome, and sarcoidosis.
- **Infective rhinitis** can be caused by viruses, bacteria, fungi and protozoa, and is usually self-limiting. Viral rhinitis is frequent in children but can be more problematic in allergic children.

- **Rhinosinusitis**, where inflammation extends into the sinuses, affects approximately 15% of the population but usually responds to therapy – which may need to be continued long term.

### Identifying the role of allergy from the clinical history

Accurate history-taking is of prime importance in establishing the role of allergy, and it is important to question patients closely. Particular questions to ask include:

- Do symptoms include sneezing or itching? – these are classic signs of an allergic reaction.
- What is the relationship between allergen exposure and symptoms? Typical (IgE-mediated) allergic symptoms occur within approximately 15 minutes of allergen exposure. This relationship is easy to identify on a single exposure (e.g. when the grass pollen count is high), but is almost impossible to identify during persistent exposure (e.g. to house dust mite or cats).
- Is there more than one organ system involved? Because mast cells are present at many different sites throughout the body, IgE-mediated allergy tends to occur in more than one organ system.
- Is there an obvious allergic trigger? In a situation where the history points to a specific allergic trigger – for example, grass pollen hay fever – an objective test of specific IgE may not be necessary.
- Is there a past history of allergic disease? Allergy is more likely in patients who have a history of allergy symptoms.
- Other questions should include family history (allergy is more common in children of atopic parent(s), environmental history (exposure to furry animals, house dust mite) and occupation/hobbies.

### Allergic rhinitis

Allergic rhinitis symptoms can be seasonal ('hay fever'), perennial, or perennial with seasonal exacerbations, with subsequent differences in allergic (atopic) state, clinical presentation, and medical history. The probability of rhinitis symptoms being

allergic in nature is significantly increased if symptoms are triggered by animals or pollen, or if the patient has a personal history or a family history of allergy.<sup>3</sup> Although there are many different triggers of allergic rhinitis, it is worth noting that treatment is rarely allergen-specific, the most effective treatment being a combination of anti-histamine and topical anti-inflammatory drugs. This means that there is limited value in identifying specific allergen triggers,<sup>3</sup> and treatment is usually effective when based on treating specific symptoms such as nasal blockage or sneezing.

### Allergy testing

The need for a diagnostic test should therefore depend on whether or not the identification of an allergen trigger will influence the treatment decision.<sup>3</sup>

There is little merit in identifying an allergic trigger if, as is often the case with indoor allergens such as house dust mites, avoidance is not possible or effective.<sup>4</sup> Empirical treatment is therefore justified as an initial step for rhinitis patients with a convincing history of allergy.

However, if allergen avoidance is both effective and possible, (in the case of food or drug allergy), or if allergen-specific treatment such as immunotherapy is being considered, then identification of the specific allergen trigger is essential.

In community settings, both skin prick tests and blood tests are available to identify IgE-mediated disease, although neither is commonly used. Further information on allergy testing can be found on PCRS-UK Opinion Sheet No 10.

### Treatment of rhinitis

Guidelines recommend a combination of non-sedating antihistamines, topical nasal corticosteroids and anti-inflammatory (cromone or anti-histamine) eye drops.<sup>5</sup> Part of the management strategy should also be to arrange adequate follow-up until patient self-management results in optimal symptom control.

- Patients with persistent nasal symptoms (particularly nasal blockage) should be treated with a nasal corticosteroid; once daily preparations may aid compliance.

- Possible side effects include nose bleeds and nasal crusting and are generally related to method of administration. Prescription of topical nasal sprays should always be accompanied by an explanation of device technique: spraying on to the septum and sniffing hard during administration should be avoided.
- Regular (daily) use is superior to as needed (PRN) use, although PRN use is superior to placebo.
- Watery rhinorrhoea tends to respond better to topical anti-cholinergic drugs rather than nasal corticosteroids.
- In patients whose symptoms remain uncontrolled, consider adding a topical nasal or oral non-sedating anti-histamine. Sedating anti-histamines have been shown to increase the risk of poor exam performance in school children<sup>2</sup> and should be avoided.
- Anti-histamines are less effective in the treatment of nasal blockage, although newer antihistamines such as desloratadine, levocetirizine or fexofenadine may be helpful.
- Topical nedocromil sodium or sodium cromoglicate should be added for uncontrolled eye symptoms (NB: use is contraindicated in contact lens wearers); topical H<sub>1</sub>-antagonists should be considered in patients with isolated eye/nose symptoms.
- Patients with rhinitis should be investigated for asthma and treated with bronchodilators and inhaled corticosteroids as appropriate.
- A follow-up visit allows identification of side effects which may affect adherence to treatment.

### Uncontrolled symptoms

The main reasons for treatment failure are likely to be poor compliance, poor nasal spray technique, inadequate dosing, or continued exposure to a relevant allergen. If symptoms persist despite optimal pharmacotherapy, or if the patient has exams or an important event coming up, a number of options are available;

#### Oral steroids

If symptoms remain uncontrolled, a short course of oral prednisolone (20mg/day for five days) may relieve acute symptoms, although there is limited evidence to support such an intervention and oral steroids cause unacceptable systemic side effects if used for a prolonged period of time.

#### Intramuscular corticosteroids

Although depot steroid injections are effective in controlling symptoms of severe hayfever,<sup>7</sup> there remain concerns over their safety. Reported side effects include local effects such as post injection flare, facial flushing and skin and fat atrophy; systemic

complications are rare but include necrosis of the femur. Moreover, a more persistent effect on bones or eyes cannot be excluded. Depot corticosteroid treatment for hayfever has been reported to cause avascular necrosis of both hips, and fatalities related to intramuscular and intra-articular injections have been reported. Medico-legal issues related to the use of intramuscular corticosteroid treatment have arisen in the UK and use of such treatments to treat a disease for which alternative safe and effective treatments exist is not advised.

#### Grass pollen immunotherapy

Immunotherapy, or desensitisation, retains a place in those patients who are unresponsive to, or cannot tolerate, conventional pharmacotherapy. Subcutaneous immunotherapy has been shown to reduce symptoms and medication use,<sup>8</sup> and long-term efficacy of immunotherapy injections following three years' treatment has been demonstrated.<sup>9</sup> Subcutaneous immunotherapy is only available in specialist centres where it is performed by trained staff with resuscitation facilities available. Details of clinics offering this treatment are available from the British Society for Allergy & Clinical Immunology at [www.bsaci.org](http://www.bsaci.org).

Sublingual immunotherapy is a novel approach which has been shown to be safe and effective.<sup>10</sup> Sublingual tablets are available as a once-daily treatment for grass pollen-induced allergic rhinoconjunctivitis in adult patients with clinically relevant symptoms diagnosed with a positive skin prick test and/or specific IgE test to grass pollen. As there is a theoretical risk of anaphylaxis, the first dose should be administered by trained staff with resuscitation facilities available.

For both treatments, success is dependent on appropriate patient selection, i.e. clinically mono-sensitive patients with identifiable IgE-mediated disease who do not respond to a combination of nasal steroids and antihistamines.

#### Who and when to refer

Identification of specific IgE sensitisation may be useful prior to referral for a specialist allergy opinion in those patients: in whom there is diagnostic uncertainty; for whom allergen-specific therapy is being considered; who have potentially life-threatening symptoms; or those – particularly children – who have concomitant food allergy and asthma. Other patients who may benefit from referral to an allergist or appropriate specialist include:

- Patients who are not responding to treatment.
- Patients who require doses of drugs that are unlicensed for a particular condition.

- Patients who require skin prick testing with non-aeroallergens which are not available as a specific IgE test (eg fruits, vegetables, drugs).
- Adults who have had anaphylaxis with cardiac or respiratory involvement.
- Patients who are candidates for specific allergen immunotherapy.
- Patients who require food challenges.
- Patients with unilateral nasal blockage and bloodstained nasal discharge should be referred to an ENT surgeon; those with orbital cellulitis should be seen urgently.

### Summary

Rhinitis is a common condition that affects a quarter of the UK population. It may be trivialised by health professionals, although symptoms have been associated with impaired concentration and learning ability. It is treatable in the majority of cases, but success depends on recognition, appropriate treatment selection, patient education and regular follow-up. Adolescents particularly should be assessed and treated carefully to prevent poor school and exam performance.

### References

1. Malone DC, Lawson KA, Smith DH, Arrighi HM, Battista C. A cost of illness study of allergic rhinitis in the United States. *J Allergy Clin Immunol* 1997; **99**:22-27.
2. Walker S, Khan-Wasti S, Fletcher M, Cullinan P, Harris J, Sheikh A. Seasonal allergic rhinitis is associated with a detrimental impact on exam performance in UK teenagers: case-control study. *J Allergy Clin Immunol* 2007; **120**(2):381-7
3. Walker SM, Morton C, Sheikh A. Diagnosing allergy in primary care: are the history and clinical examination sufficient? *Prim Care Resp J* 2006; **15**:219-21.
4. Gotzsche PC, Hammarquist C, Burr M. House dust mite control measures in the management of asthma: meta-analysis. *BMJ* 1998; **317**:1105-10.
5. Angier E, Willington J, Scadding G, Holmes S, Walker S. Management of allergic and non-allergic rhinitis: a primary care summary of the BSACI guideline. *Prim Care Resp J* 2010; **19**(3):217-22
6. Sheikh A, Hurwitz B. House dust mite avoidance measures for perennial allergic rhinitis: a systematic review of efficacy. *Brit J Gen Pract* 2003; **53**(489), 318-22.
7. Ostergaard MS, Ostrem A, Soderstrom M. Hayfever and a single intramuscular injection of corticosteroid: a systematic review. *Prim Care Resp J* 2005; **14**:124-30.
8. Walker SM, Pajno G, Torres Lima M, Wilson DW, Durham S.R. Grass pollen immunotherapy for seasonal rhinitis and asthma: A randomised controlled trial.
9. Durham SR, Walker SM, Varga E-M, et al. Long-term clinical efficacy of grass pollen immunotherapy. *N Eng J Med* 1999; **341**:468-75.
10. Di Bona D, Plaia A, Scafidi V, Leto-Barone MS, Di Lorenzo G. Efficacy of sublingual immunotherapy with grass allergens for seasonal allergic rhinitis: A systematic review and meta-analysis. *Journal of Allergy and Clinical Immunology* 2010; **126**(3):558-566.

Date of Preparation: August 2008, Revised July 2011 Author: Dr Samantha Walker, London Conflict of interest: None  
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