Management of allergic rhinitis

Rhinitis is characterised by the presence of two or more of the following symptoms: nasal blockage, sneezing, rhinorrhea (a persistent watery mucous discharge from the nose) and nasal itching which last for an hour or more on most days. Allergy is the commonest cause of chronic symptoms. Patients with allergic rhinitis often have a clear relationship between symptoms and allergen exposure, for example, during the tree/grass pollen season. Viral or bacterial infection is the commonest acute cause of symptoms and is usually self-limiting.

Mechanisms of allergy Allergic reactions – such as the sneezing, itching and watery eyes associated with summer hayfever – occur as a result of an interaction between an allergen, such as grass pollen and mast cells. Mast cells are ubiquitous in the peripheral blood and tissues and contain granules, which in turn contain histamine. Histamine is a potent chemical that causes itching due to irritation of nerve endings, redness due to vasodilation of blood vessels, and swelling due to increased vascular permeability. This interaction is mediated by an antibody called immunoglobulin E (IgE).

The inhalation, ingestion or injection of an allergen results in a classic sequence of events. The allergen quickly forms a bridge between allergen-specific IgE antibody molecules and mast cells. The mast cells then degranulate (break open) and release histamine, along with other chemicals, into the local and general circulation causing the characteristic symptoms of allergy in one or more organ system. The classic signs of allergy – itching, redness and swelling – and its time course (immediate symptoms, vasodilation of blood vessels, and swelling due to increased vascular permeability). This interaction is mediated by an antibody called immunoglobulin E (IgE).

Who is affected by allergic rhinitis? In a community-based postal survey of 2,969 adults in the UK, the prevalence of all forms of rhinitis in respondents aged 16–65 years was reported to be 24 per cent (Sibbald et al, 1990). Subsequent analysis identified three per cent as having pure seasonal disease, 13 per cent as having perennial disease and eight per cent a combination of perennial and seasonal rhinitis. It is likely, however, that these figures are an underestimate.

The groups most commonly affected by rhinitis are children and young adults. A study investigating the incidence of reported hayfever among 12,355, 23-year-olds in the UK reported a prevalence of 16.5 per cent (Strachan, 1995). In an American study that followed 747 children from birth, 42 per cent had doctor-diagnosed allergic rhinitis by the age of six years (Wright et al, 1994). In general, prevalence declines with age, although it is possible for adults to develop symptoms for the first time during middle age.

Signs and symptoms A number of nasal symptoms are associated with allergic rhinitis, in particular a blocked, stuffy, runny nose and sneezing. Patients can also experience sleep disturbance and subsequent exhaustion the next day. Non-nasal symptoms such as a dry mouth, constant thirst and headache may lead to poor concentration (Juniper and Guyatt, 1991) and lack of productivity (Vuurman et al, 1993) in adult patients.

Adolescents (aged 12–17 years) with rhinoconjunctivitis face similar problems. While insomnia is less of an issue, they experience more difficulties with concentration, especially with schoolwork. Younger children (aged 6–12 years) tend to experience less interference with their normal daily activities and do not express the emotional dysfunction experienced by adults and adolescents.

In fact, researchers have observed that parents can seem more concerned about their children’s symptoms than the children themselves – although they tend to be unaware of their children’s less obvious problems, such as sleeping difficulties (Juniper et al, 1998). Allergic rhinitis has been shown to reduce children’s learning ability compared with the non-allergic control (Vuurman et al, 1993).

The cost implications associated with lost work or school days due to allergic rhinitis in the UK are unknown. A recent US study showed that the condition resulted in approximately 81,100 missed workdays, 824,000 missed school days and 4,230,000 days with reduced activity (Malone et al, 1997).

Despite its varied, intrusive and potentially costly effects, the symptoms of allergic rhinitis are often trivialised by patients and health professionals alike. This creates a culture where symptoms are seen as unimportant, and their effects on concentration and learning go unnoticed.

Seasonal variations and links to other diseases Allergic rhinitis can be triggered by exposure to a range of seasonal and perennial triggers. In the spring and summer, seasonal allergic rhinitis (hayfever) occurs following exposure to allergens such as tree, grass and weed pollens. Symptoms may, therefore, occur in February and March (trees), May to July (grasses) and August (weeds). Year-round symptoms may be experienced as a result of continuous exposure to allergens such as house-dust mite and cat dander.

Allergic rhinitis and asthma often co-exist in the same patients. Some reports estimate that 80 per cent of people with asthma have rhinitis while 60–70 per cent of patients with rhinitis also have asthma. Recent
guidelines (Bousquet et al, 2001) have emphasised the importance of treating allergic rhinitis as well as allergic asthma where the two conditions co-exist.

**Diagnosis and management** In those with clear exacerbations of symptoms in relation to allergen exposure, diagnosis is simple and formal identification of the particular allergen involved may be unnecessary. Allergy tests such as skin-prick tests or specific IgE (sIgE) blood tests can help to identify sensitisation to a specific allergen in persistent or perennial rhinitis. A diagnosis of allergic rhinitis is more likely in those who have multiple nasal symptoms as well as associated symptoms such as conjunctivitis and asthma.

Management of allergic rhinitis is dependent upon diagnosis, education and pharmacological treatment using a stepped approach. Treatment choices and patient management should depend on efficacy of treatment, safety and compliance, as well as patient preference. The following recommendations are based on the most recently published guidelines from the British Society for Allergy and Clinical Immunology (Scadding et al, 2000), and highlight the key issues that are of importance to the treatment of rhinitis.

**Treatment of mild, intermittent symptoms**

Identification and avoidance of the trigger allergen may be helpful. If you are allergic to pollen, for example, you could take a holiday abroad or by the sea during the peak pollen season. Similarly, you could keep furry pets outside and try to minimise exposure to house-dust mite or cat allergens. However, house-dust mite reduction measures are time-consuming and often costly, and there is little evidence that they significantly reduce symptoms.

Pharmacological treatment should include a non-sedating antihistamine such as loratadine, cetirizine, desloratadine, fexofenadine and levocetirizine, taken as required. If symptoms are confined to the eyes or nose, topical application of an antihistamine such as azelastine, levocabastine or sodium cromoglicate may be sufficient to control symptoms.

**Treatment of persistent symptoms (moderate/severe)** The choice of drug treatment should be based on the primary symptom, although optimal symptom control is likely to be achieved with a combination of treatments.

**Nasal blockage** The first line treatment is daily application of a topical nasal steroid such as fluticasone, mometasone, budesonide or beclometasone (Weiner et al, 1998). Antihistamines are less effective in the treatment of nasal blockage, although newer ones such as desloratadine may help.

Prescription of topical nasal sprays should be coupled with an explanation of technique. Devices should be used according to manufacturers’ instructions. Patient information should include the need for daily use and potential side-effects of crusting or bleeding which are usually caused by poor technique. Problems with sneezing tend to resolve as hyper-reactivity decreases.

Serious side-effects to nasal steroids are rare at conventional doses. However, care should be taken when corticosteroids are administered concurrently by alternative routes, for example, inhalers or skin creams.

It is important to explain to patients that they need to persist with treatment to experience the most benefit. Patients should be followed up two weeks after the onset of symptoms; uncontrolled symptoms may occur as a result of poor compliance, poor nasal technique or incorrect diagnosis. Patients who continue to experience symptoms despite a clear diagnosis and no evidence of poor compliance/technique, should have their dose of steroids increased or be switched to an alternative nasal steroid. If symptoms remain uncontrolled, they may benefit from referral to an allergy specialist and/or ear, nose and throat surgeon.

**Rhinorrhea, itching, sneezing** These symptoms usually respond best to a combination of a daily topical nasal steroid and a non-sedating antihistamine. If the symptoms are unresponsive, compliance and nasal spray technique should be checked; if these are not the problem an alternative antihistamine, increased dose of nasal steroid, or an alternative nasal steroid can be tried.

**Uncontrolled symptoms** If symptoms remain uncontrolled, a short course of oral prednisolone (20mg daily for five days) may relieve acute symptoms, although there is limited evidence to support such an intervention. Depot triamcinolone is no longer recommended in the UK due to concerns regarding adverse events associated with its use (Drug and Therapeutics Bulletin, 1999). Grass pollen immunotherapy is effective at reducing symptoms in patients with seasonal allergic rhinitis (Walker et al, 2001).

**Conclusion** Allergic rhinitis is a common disease which can occur during the spring and summer as a result of exposure to pollen and all year round following persistent exposure to house-dust mite or cat allergens. Symptoms generally respond well to a combination of nasal steroids and non-sedating antihistamines.