Respiratory conditions are one of the most common problems encountered by primary care practitioners. Conditions such as cough, cold and sore throat are extremely common, with the average GP seeing between 700 and 1000 patients with respiratory disease each year.

Cough

The main function of coughing is airway clearance. Coughs can be described as productive (chesty) or non-productive (dry, tight, tickly). Many patients will deny that they are producing sputum but might say that they ‘can feel it on their chest’. In these cases the cough is probably productive and should be treated as such. Coughs can be classed as acute (< 3 weeks’ duration) or chronic (> 3 weeks). Chronic coughs should be referred to a medical practitioner.

Arriving at a differential diagnosis

The most likely cause of acute cough in primary care for all ages is viral infection. Practitioners should therefore direct questions to confirm this diagnosis as other conditions can give rise to symptoms of cough and are listed below.

<table>
<thead>
<tr>
<th>Probability</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most likely</td>
<td>Viral infection</td>
</tr>
<tr>
<td>Likely</td>
<td>Postnasal drip, allergy</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Croup, chronic bronchitis, asthma, pneumonia, ACE inhibitor</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>Heart failure, bronchiectasis, tuberculosis, cancer, pneumothorax, lung abscess, nocardiosis, GORD</td>
</tr>
</tbody>
</table>

ACE, angiotensin-converting enzyme; GORD, gastro-oesophageal reflux disease.
Clinical features of acute viral cough

Viral coughs typically present with sudden onset, fever and associated cold symptoms. Sputum production is minimal and symptoms are often worse in the evening. These coughs usually last 7–10 days. A number of other factors need to be considered, e.g. when the cough occurs and previous and medical history to ensure that the assumption of viral cough is correct. Table 1.1 lists the questions that should be asked to help determine the diagnosis.

<table>
<thead>
<tr>
<th>Question</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sputum colour</td>
<td>• Mucoid (clear and white), yellow/green/brown sputum suggests viral infection.</td>
</tr>
<tr>
<td></td>
<td>• Haemoptysis suggests sinister pathology: refer</td>
</tr>
<tr>
<td></td>
<td>– Rust-coloured sputum suggests pneumonia</td>
</tr>
<tr>
<td></td>
<td>– Pink-tinged sputum suggests left ventricular failure</td>
</tr>
<tr>
<td></td>
<td>– Dark-red sputum suggests carcinoma</td>
</tr>
<tr>
<td>Nature of sputum</td>
<td>• Thin and frothy suggests left ventricular failure: refer</td>
</tr>
<tr>
<td></td>
<td>• Thick/mucoid suggests asthma</td>
</tr>
<tr>
<td></td>
<td>• Offensive, foul-smelling sputum suggests bronchiectasis or lung abscess: refer</td>
</tr>
<tr>
<td>Onset of cough</td>
<td>• Worse in the morning suggests postnasal drip, bronchiectasis or chronic bronchitis</td>
</tr>
<tr>
<td></td>
<td>• If a child has a non-productive cough at night this suggests asthma</td>
</tr>
<tr>
<td>Duration of cough</td>
<td>• &gt;1 week and mucopurulent sputum suggests bacterial infection</td>
</tr>
<tr>
<td></td>
<td>• The longer the duration the more likely underlying pathology is responsible:</td>
</tr>
<tr>
<td></td>
<td>– Cough of 3 days suggests viral infection</td>
</tr>
<tr>
<td></td>
<td>– Cough of 3 weeks suggests acute or chronic bronchitis</td>
</tr>
<tr>
<td></td>
<td>– Cough of 3 months suggests chronic bronchitis, tuberculosis or carcinoma</td>
</tr>
</tbody>
</table>
Chapter 1 Respiratory system

Cough

<table>
<thead>
<tr>
<th>Question</th>
<th>Relevance</th>
</tr>
</thead>
</table>
| Periodicity       | ● In adults, especially if they smoke, recurrent cough suggests chronic bronchitis  
                   | ● In children, a recurrent cough and family history of eczema, asthma or hay fever suggest asthma |
| Age of the patient| ● Cough in children suggests an upper respiratory tract infection  
                   | ● In a child a non-productive cough at night suggests asthma  
                   | ● Increasing age increases the chances of more sinister pathology, e.g. bronchitis, pneumonia and carcinoma |
| Smoking history   | ● Smokers are more prone to chronic and recurrent cough. Over time this could develop into chronic bronchitis and emphysema |

Conditions to eliminate

Likely causes

Postnasal drip This is characterised by sinus or nasal discharge that flows in to the throat. Patients should be asked if they are swallowing mucus or clearing their throat more than usual, as these are common symptoms in patients with postnasal drip.

Allergy-related cough Cough is non-productive and often worse at night. Other associated symptoms are usually present, e.g. sneezing, nasal discharge/blockage and conjunctivitis. Cough of allergic origin might show seasonal variation, e.g. hay fever.

Unlikely causes

Laryngotracheobronchitis (croup) Croup primarily affects infants aged 9–18 months. The cough is described as having a barking quality and often occurs after an upper respiratory tract infection. Attacks typically occur in the middle of the night and subside within a few hours.
Chronic bronchitis (CB)  This is the most common cause of chronic cough in adults. Patients usually present with a longstanding history of recurrent acute bronchitis. A history of smoking is the single most important factor in the aetiology of chronic bronchitis. Cough is normally productive.

Asthma  Asthma is characterised by coughing, wheeze, chest tightness and shortness of breath. However, asthma can present solely as a non-productive cough. This is especially true in young children, in whom the cough often worsens at night.

Pneumonia  Initially, the cough is non-productive and painful but it rapidly becomes productive, with sputum being stained red. The cough tends to worsen at night. The patient will be unwell and suffer from a high fever, malaise, chills, headache and pleuritic pain.

Medicine-induced cough or wheeze  Angiotensin-converting enzyme (ACE) inhibitors are most commonly associated with cough and can affect up to one in five patients.

Very unlikely causes

Heart failure  Heart failure is a condition of the elderly. It is characterised by insidious progression, the first symptoms being shortness of breath and dyspnoea at night. As the condition progresses the patient might develop a productive, frothy cough, which may be pink tinged.

Bronchiectasis  Characteristically, the patient has a chronic cough of very long duration that produces copious amounts of mucopurulent sputum that is usually foul smelling.

Tuberculosis (TB)  Tuberculosis is characterised by its slow onset and initial mild symptoms. The cough is chronic in nature and sputum production can vary from mild to severe with associated haemoptysis. Other symptoms of the condition are malaise, fever, night sweats and weight loss.

Carcinoma of the lung  Lung cancer is associated with long-term cigarette smokers who have had a cough for a number of months or who develop a marked change in the character of their cough. The cough produces small amounts of
sputum, which might be blood streaked. Dyspnoea, weight loss and fatigue might also be seen.

**Spontaneous pneumothorax (collapsed lung)** This most frequently affects tall, thin men aged 20–40 years. The patient experiences sudden sharp chest pain that worsens on chest movement. Smoking and a family history of pneumothorax are contributing risk factors.

**Lung abscess** A typical presentation is of a non-productive cough with pleuritic pain, dyspnoea, malaise and fever. In time the cough produces large amounts of purulent and often foul-smelling sputum.

**Nocardiosis** There is a productive cough producing purulent, thick and possibly blood-tinged sputum. Fever is prominent and night sweats, pleurisy, weight loss and fatigue might also be present.

**Gastro-oesophageal reflux disease (GORD)** Reflux does not usually present with cough, but patients with this condition may cough when lying down. It should always be considered in all cases of unexplained chronic cough.

**Primer for differential diagnosis**

Figure 1.1 helps to differentiate between serious and non-serious conditions of cough.

**TRIGGER POINTS indicative of referral: cough**

- Chest pain.
- Chronic cough (> 3 weeks).
- Cough that recurs on a regular basis.
- Haemoptysis.
- Pain on inspiration.
- Persistent nocturnal cough in children.
- Wheeze and/or shortness of breath.

**Evidence of OTC medicine efficacy**

Efficacy trials involving cough medicines are limited. They suffer from poor design and low patient numbers and have
Clinical evidence of efficacy is therefore difficult to establish. However, a systematic review of OTC cough medicines (expectorants, antihistamines and antitussives) for acute coughs in adults was published in the *British Medical Journal* in 2002. Fifteen trials involving 2166 participants/patients met the authors’ inclusion criteria. In nine of the trials the active ingredient was no better than placebo and the authors of the review questioned the clinical relevance of the other six trials that showed positive findings. In conclusion, the authors stated that OTC cough medicines for acute cough cannot be recommended because there is no good evidence of effectiveness.
Chapter 1 Respiratory system

The common cold

Cough medication for children

Very few well-designed studies have been conducted in children. It appears from the limited data that cough medication for children is no better than placebo.

Practical prescribing

Prescribing information relating to cough medication is summarised in the appendix.

The common cold

Colds, along with coughs, represent the largest caseload for primary healthcare workers. Depending on age, people suffer 3–12 colds per year.

Arriving at a differential diagnosis

The most likely cause of cold symptoms in primary care for all ages is a viral infection. Practitioners should therefore direct questions to confirm this diagnosis as other conditions can give rise to cold symptoms and are listed below.

HINTS AND TIPS

- Avoid theophylline products: theophylline can help with wheeze or shortness of breath and is available OTC. However, such symptoms should be referred to the GP.
- Avoid illogical combinations: there are still a few products on the market that have illogical cough ingredient combinations, e.g. combinations of expectorants and suppressants (Pulmo Bailey) or expectorant and antihistamines (e.g. Histalix).
- Coughs lasting longer than 3 weeks: most acute, self-limiting coughs resolve within 3 weeks. However, not all coughs that have lasted 3 weeks have to be referred automatically. Postnasal drip and seasonal allergies (e.g. hay fever) can persist for weeks.
Clinical features of the common cold

Symptoms of the common cold are well known. Usually, symptoms start with sore throat and sneezing followed by nasal discharge/congestion. Cough and postnasal drip commonly follow, often accompanied by headache, fever and general malaise. Common colds can last for 14 days or more.

Table 1.2 lists some of the questions that should be asked to aid diagnosis.

Conditions to eliminate

 Likely causes

Seasonal allergic rhinitis (hay fever) Patients experience a combination of or all four classic rhinitis symptoms of nasal itch, sneeze, rhinorrhoea and nasal congestion. Hay fever sufferers also commonly experience allergic conjunctivitis and experience symptoms from March to October.

Acute sinusitis Acute sinusitis is a complication of the common cold. Pain in the early stages is relatively localised, usually unilateral and dull but might become bilateral and more severe the longer the condition persists. Bending down, coughing or sneezing often exacerbates the pain. If the ethmoid sinuses (located near to and behind the bridge of the nose) are involved then pain behind the eye(s) is often experienced.

Otitis media Most common in children, otitis media presents as ear pain, accompanied by fever often after or during a cold. Pain is relieved once the eardrum ruptures causing purulent discharge, which usually lasts 2–3 days.
Chapter 1 Respiratory system

The common cold

Unlikely causes

Influenza  Flu symptoms present in a similar fashion to those of the common cold but are usually more severe. Patients with flu are likely to be bed-bound and debilitated. A patient who presents to a healthcare professional claiming to have flu is much more likely to have a cold.

Table 1.2
Specific questions to ask the patient: the common cold

<table>
<thead>
<tr>
<th>Question</th>
<th>Relevance</th>
</tr>
</thead>
</table>
| Onset of symptoms | ● Flu is normally seen in the winter months whereas the common cold can occur at any time  
  ● Flu symptoms tend to be more abrupt in onset than the common cold, starting in hours rather than 1 or 2 days  
  ● Summer colds are common but they must be differentiated from seasonal allergic rhinitis (hay fever) |
| Nature of symptoms | ● Marked myalgia, chills and malaise are more prominent in flu than the common cold. Loss of appetite is also common with flu |
| Aggravating factors | ● If headache/pain is worsened when sneezing, coughing and bending over, this suggests sinus complications  
  ● If ear pain is present, especially in children, this suggests middle ear involvement |

Unlikely causes

Influenza  Flu symptoms present in a similar fashion to those of the common cold but are usually more severe. Patients with flu are likely to be bed-bound and debilitated. A patient who presents to a healthcare professional claiming to have flu is much more likely to have a cold.

TRIGGER POINTS indicative of referral: cold

● Acute sinus involvement.
● Ear pain originating from the middle ear.
● Patients with symptoms indicative of flu.
● Vulnerable patient groups, such as the very elderly.
Evidence of OTC medicine efficacy

Many of the active ingredients found in cold remedies are also constituents of cough products. In many cases they are combined and marketed as cough/cold or flu remedies.

Antihistamines

A review article published in the *Journal of the American Medical Association* in 1993 on OTC cold medications concluded that only chlorphenamine reduced sneezing and decreased symptom scores. Other antihistamines (diphenhydramine and triprolidine) were no better than placebo.

Systemic and topical sympathomimetics

Sympathomimetics are clinically effective, although only pseudoephedrine (systemic) and oxymetazoline (topical) have trial data to support their efficacy.

Multi-ingredient preparations

No multi-ingredient preparation has specific trial data to substantiate its effectiveness, but they often contain ingredients that have known clinical efficacy, e.g. decongestants and analgesia. In the majority of cases patients will not require all the active ingredients within the preparation to treat their symptoms. A more sensible approach to treatment is to match symptoms with active ingredients with known efficacy. This can be achieved in many cases by providing the patient with monotherapy or a product containing two active ingredients.

Alternative therapies

Many products are advocated to help treat cold symptoms, in particular zinc, vitamin C and echinacea.

Zinc lozenges

There is a growing body of evidence to show that zinc can decrease the duration and severity of the common cold, although the evidence is based on small studies.

Vitamin C

Vitamin C has been widely recommended as a ‘cure’ for the common cold, but whether or not it is effective remains con-
troversial. Recent large-scale reviews (Douglas et al, Cochrane Library issue 3, 2004) of trial data have concluded that vitamin C does not prevent colds but may reduce the duration of cold symptoms when ingested in high doses (up to 1 g daily).

**Echinacea**
Current evidence is conflicting. Some studies suggest that echinacea preparations might be better than placebo at decreasing the duration of the common cold, but there is no strong evidence to recommend a specific echinacea product or dosage. Other studies have shown no effect (e.g. Yale et al, *Arch Intern Med* 2004; 164: 1237–1241).

**Steam inhalation**
Current trial data support the use of vapour inhalation in relieving the symptoms of the common cold. It appears that steam is the key to symptom resolution and not any additional ingredients that might be added to the water.

**Practical prescribing**
Prescribing information relating to cold medication is summarised in the appendix.

**HINTS AND TIPS**
- Stuffy noses in babies: saline nose drops can be used from birth to help with congestion.
- General sales list (GSL) cold remedies: products such as the Lemsip and Beechams range contain paracetamol. It is important to ensure patients are not taking excessive doses of analgesia unknowingly. Also, many contain subtherapeutic doses of sympathomimetics. If a sympathomimetic is needed then these products are best avoided.
- Administration of nose drops: the best way to administer nose drops is to have the head in the downwards position facing the floor. Tilting the head backwards and towards the ceiling is incorrect as it facilitates the swallowing of the drops. However, most patients will find the latter way of putting drops in to the nose much easier than the former.
Sore throat

Most adults experience two or three sore throats each year. Symptoms can range from mild to severe pain.

Arriving at a differential diagnosis

The most likely cause of sore throat in primary care for all ages is a viral infection. Practitioners should therefore direct questions to confirm this diagnosis as other conditions can give rise to sore throat and are listed below.

<table>
<thead>
<tr>
<th>Probability</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most likely</td>
<td>Viral infection</td>
</tr>
<tr>
<td>Likely</td>
<td>Streptococcal infection</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Thrush, herpes simplex, glandular fever, trauma</td>
</tr>
<tr>
<td>Very unlikely</td>
<td>Carcinoma, medicines</td>
</tr>
</tbody>
</table>

Clinical features of viral sore throat

Sore throat is the most obvious symptom but there might be other systemic symptoms such as malaise, fever, headache and cough. Symptoms spontaneously resolve after about 7–10 days.

Differentiation between viral and other causes of sore throat must be made before treatment is given. Table 1.3 lists a number of questions that should be asked to help diagnosis.

Physical examination

After questioning, an inspection of the mouth should be performed. Use a good light source (e.g. pen torch). Ask the patient to open the mouth and to say ‘ah’; this should allow you to see the pharynx well. When examining the mouth pay particular attention to the fauces and tonsils. Are they red and swollen? Is any exudate present? Is there any sign of ulceration? Also feel the cervical glands (located just below the angle of the jaw) to see if they are swollen.
Conditions to eliminate

Likely causes

Streptococcal sore throat  A sore throat that has lasted longer than 1 week can suggest a streptococcal infection, especially if accompanied by marked tonsillar exudate, tender cervical glands, a temperature of over 101°F (39.4°C) and the absence of cough.

Unlikely causes

Glandular fever (infectious mononucleosis) Patients with glandular fever are typically adolescents and young adults. Symptoms are characterised by pharyngitis, fever, cervical lymphadenopathy and fatigue. The person might also have suffered from general malaise prior to the onset of the other symptoms.

Sore throat caused by trauma  Occasionally patients develop a sore throat from direct irritation of the pharynx. This

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Table 1.3  Specific questions to ask the patient: sore throat

<table>
<thead>
<tr>
<th>Question</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of the patient</td>
<td>• Streptococcal infections are more prevalent in school-aged children</td>
</tr>
<tr>
<td></td>
<td>• Glandular fever is most prevalent in adolescents</td>
</tr>
<tr>
<td></td>
<td>• Oral thrush affects the very young and very old</td>
</tr>
<tr>
<td>Tender cervical glands</td>
<td>• Marked swollen glands suggest glandular fever or streptococcal sore throat. This is less so in viral sore throat</td>
</tr>
<tr>
<td>Tonsillar exudate present</td>
<td>• Marked tonsillar exudate suggests a bacterial cause</td>
</tr>
<tr>
<td>Nature of the pain</td>
<td>• True difficulty in swallowing (not just pain when swallowing) suggests a mechanical blockage (e.g. carcinoma): refer</td>
</tr>
</tbody>
</table>

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Chapter 1 Respiratory system

Sore throat
might be due to cigarette smoke, a lodged foreign body or acid reflux.

**Oral thrush**  Pain and soreness is often present but in oral thrush soft, elevated, creamy-white patches anywhere in the oral cavity should be present.

**Herpes simplex infection**  This is a common cause of oral ulceration in children. Primary infection results in ulceration of the gums, tongue and cheeks but can affect any part of the oral mucosa, leading to sore throat. Multiple ulcers should be visible on examination. The infection spontaneously resolves in 7–14 days.

**Very unlikely causes**

**Medicine-induced sore throat**  Agranulocytosis (decrease in all white blood cells) is associated with a number of medicines:

- captopril
- carbimazole
- cytotoxics
- neuroleptics, e.g. clozapine
- penicillamine
- sulfasalazine
- sulphur-containing antibiotics.

**Laryngeal and tonsillar carcinoma**  Both these cancers have a strong link with smoking and excessive alcohol intake, and are more common in men than in women. Sore throat and dysphagia are the common presenting symptoms. Patients with tonsillar cancer often develop referred ear pain.

**TRIGGER POINTS indicative of referral: sore throat**

- Adverse drug reaction.
- Associated skin rash.
- Duration > 2 weeks.
- Dysphagia.
- Marked tonsillar exudate accompanied by a high temperature and swollen glands.
Primer for differential diagnosis of sore throat

Figure 1.2 helps to differentiate between serious and non-serious conditions in which sore throat is a major presenting complaint.

Evidence of OTC medicine efficacy

OTC medication is either topical, containing antibacterials and anaesthetics, or systemic analgesia.
Local anaesthetics (lidocaine and benzocaine)

Very few trials involving products marketed for sore throat have been conducted, and it appears that manufacturers are using trial data on local anaesthetic efficacy for conditions other than sore throats to substantiate their effect.

Antibacterial and antifungal agents

These products should not be routinely recommended because viruses cause most sore throats and these agents have no action against viruses.

Anti-inflammatories

Benzydamine is available as a spray or mouthwash and has proven efficacy in relieving the pain associated with sore throat.

Analgesia

There is good evidence to show that simple systemic analgesia, e.g. paracetamol, aspirin and ibuprofen, is effective in reducing the pain associated with sore throat. In addition, flurbiprofen lozenges have also shown to be significantly more effective than placebo in reducing pain.

Practical prescribing

Prescribing information relating to sore throat medication is summarised in the appendix.

HINTS AND TIPS

- Stimulation of saliva production: sucking a lozenge or pastille promotes saliva production, which will lubricate the throat and exert a soothing action.
- Anaesthetic preparations: pastilles containing local anaesthetics can numb the tongue rather than the throat. Sprays which direct the anaesthetic onto the throat might be more useful.
Allergic rhinitis

Allergic rhinitis is either seasonal (hay fever) or year round (perennial rhinitis) and characterised by rhinorrhoea, nasal congestion, sneezing and itching. It is becoming more common, with the prevalence doubling in the last 30 years.

Arriving at a differential diagnosis

The most likely cause of allergic rhinitis encountered in primary care is hay fever. Practitioners should therefore direct questions to confirm this diagnosis as other conditions cause rhinitis and are listed below.

<table>
<thead>
<tr>
<th>Probability</th>
<th>Cause</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Most likely</td>
<td>Hay fever</td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>Viral infection, perennial rhinitis</td>
<td></td>
</tr>
<tr>
<td>Unlikely</td>
<td>Vasomotor rhinitis, pregnancy, medicines, nasal foreign bodies, polyps</td>
<td></td>
</tr>
</tbody>
</table>

Clinical features of hay fever

The patient will experience a combination of nasal itch, sneeze, rhinorrhoea and nasal congestion, and in addition might have conjunctivitis. Symptoms occur intermittently (i.e. at times of pollen exposure) and tend to be worse in the morning/evening or when the weather is hot and humid. Diagnosis is largely dependent on the patient having a family history of atopy and clinical symptoms. Table 1.4 lists the questions that should be asked to help determine the cause.

Conditions to eliminate

Likely causes

Infective rhinitis  Infective rhinitis is associated with the common cold. Nasal discharge tends to be more mucopurulent than allergic rhinitis and nasal itching is uncommon. Sneezing tends not to occur in paroxysms and symptoms usually resolve within a couple of weeks. This in contrast to allergic rhinitis, which lasts for as long as the person is
exposed to the allergen. Other symptoms, such as cough and sore throat, are much more prominent in infective rhinitis.

**Perennial allergic rhinitis** Perennial allergic rhinitis is 10 times less common than hay fever. Symptoms tend to be experienced year-round but may worsen in the summer months. Nasal congestion is common and patients are more prone to sinusitis. The sense of smell can be diminished and patients tend to suffer from less sneezing and conjunctivitis than those with hay fever.

**Unlikely causes**

**Vasomotor rhinitis** Symptoms are very similar to allergic rhinitis yet an allergy test will be negative. Itching and sneezing are less common and patients may experience worsening nasal symptoms in response to climactic factors such as a sudden change in temperature.
Rhinitis of pregnancy  This occurs due to hormonal changes and resolves spontaneously after childbirth.

Rhinitis medicamentosa  Prolonged use of topical decongestants can cause rebound vasodilatation of the nasal arterioles leading to further nasal congestion. A medication history should be taken from the patient.

Nasal blockage or foreign body  If congestion is the only symptom, it is possible that the problem is mechanical or anatomical. Continuous and unilateral blockage might relate to a deviated nasal septum in adults or a trapped foreign body in young children. Bilateral obstruction might relate to nasal polyps in adults.

Primer for differential diagnosis

Figure 1.3 helps to aid differentiation of the different types of rhinitis.

TRIGGER POINTS indicative of referral: rhinitis

- Failed medication.
- Medicine-induced rhinitis.
- Nasal obstruction that fails to clear.
- Unilateral discharge, especially in children.

Evidence of OTC medicine efficacy

Allergen avoidance

Avoidance of pollen is almost impossible but exposure can be diminished, e.g. staying indoors when pollen counts are high, keeping windows closed and wearing ‘wrap around’ sunglasses. House-dust mite and animal dander are more easily avoided. The offending pet can be kept out of certain parts of the house, such as living areas and bedrooms. Using allergen-impermeable bed linen and acaricidal sprays can reduce house-dust mite. Replacing carpeted rooms with wooden flooring will also help reduce both animal dander and house-dust mite.
Symptoms, Diagnosis and Treatment  
A Guide for Pharmacists and Nurses

Figure 1.3  Primer for differential diagnosis of rhinitis.

Medication (systemic or topical)

Systemic therapy
Both sedating and non-sedating antihistamines have proven efficacy but, given the sedative properties of older sedating antihistamines, these should not be routinely recommended; however, it is not true that non-sedating antihistamines never cause sedation. A review in the British Medical Journal (2000) showed that loratadine causes the least sedation of all antihistamines and, on this basis, would be the antihistamine of choice.

Topical therapy (intranasal or intraocular)
Corticosteroids are the medicine of choice when nasal congestion is the major symptom. WHO recommendations and a meta-analysis (Weiner et al, Br Med J 1998; 317:
1624–1629) have concluded that corticosteroids are superior to systemic antihistamines. Other topical agents with proven efficacy include antihistamines (azelastine and levocabastine) and decongestants (although only oxymetazoline appears to have trial data to support its efficacy). Evidence of efficacy via the nasal route is least for sodium cromoglicate.

**Intraocular medication**
Trials have shown sodium cromoglicate and the antihistamine levocabastine to be superior to placebo and equally effective. Sympathomimetics (e.g. naphazoline) do decrease ocular redness but can cause rebound redness with prolonged use, so, if used, they should be restricted to short-term use. A combination antihistamine/decongestant product is also available (Otrivine Antistin) but there are few trial data to support its effectiveness; one small trial concluded that the combination of the two drugs was superior to either alone (Abelson et al, *Am J Ophthalmol* 1980; 90: 254–257).

**Practical prescribing**
Prescribing information relating to rhinitis medication is summarised in the appendix.

**HINTS AND TIPS**
- Corticosteroid nasal sprays: for full therapeutic benefit, regular use is essential. The patient should also be warned that maximum relief might not be obtained for several days.
- Breakthrough symptoms with one-a-day antihistamines: patients who suffer breakthrough symptoms using a once-daily preparation (loratadine, cetirizine) might benefit from changing to acrivastine as three-times-a-day dosing might confer better symptom control.