Sore throat

Allergic rhinitis (hay fever)

- Most people with a sore throat do not consult the doctor – only about 5% do so and many will consult their pharmacist.

- Most sore throats that present in the pharmacy will be caused by viral infection (90%), with only 1 in 10 being due to bacterial infection, so treatment with antibiotics is unnecessary in most cases.

- Clinically it is almost impossible to differentiate between the two.

- The majority of infections are self-limiting. Sore throats are often associated with other symptoms of a cold.

What you need to know

- Age (approximate)
  - Baby, child, adult
- Duration
- Severity
- Associated symptoms
  - Cold, congested nose, cough
  - Difficulty in swallowing
  - Hoarseness
  - Fever
- Previous history
  - Smoking habit
- Present medication

- Establishing who the patient is will influence the choice of treatment and whether referral is necessary. Streptococcal (bacterial) throat infections are more likely in children of school age.

- Most sore throats are self-limiting and will be better within 7–10 days.

- If it has been present for longer, then the patient should be referred to the doctor for further advice.

- **Severity**
- If the sore throat is described as being extremely painful, especially in the absence of cold, cough and catarrhal symptoms, then referral should be recommended when there is no improvement within 24–48 h.

Associated symptoms

- Cold, catarrh and cough may be associated with a sore throat.
- There may also be a fever and general aches and pains.
- These are in keeping with a minor self-limiting viral infection.
- Both hoarseness of longer than 3 weeks' duration and difficulty in swallowing (dysphagia) are indications for referral.

- **Previous history**
- Recurrent bouts of infection (tonsillitis) would mean that referral is
- best.

- Smoking will exacerbate a sore throat, and if the patient smokes then it can be a good time to offer advice and information about quitting.

Present medication

- The pharmacist should establish whether any medication has been tried already to treat the symptoms.
- If one or more medicines have been tried without improvement, then referral to the doctor should be considered.
- Steroid inhalers (e.g. *beclomethasone* or *budesonide*) can cause hoarseness and candidal infections of the throat and mouth.

- Generally, they tend to do this at high doses.
- Such infections can be prevented by rinsing the mouth with water after using the inhaler.
- Poor technique with metered-dose inhalers can lead to large amounts of the inhaled drug being deposited at the back of the throat.

- Any patient taking *carbimazole* and presenting with a sore throat should be referred immediately.

- A rare side effect of *carbimazole* is agranulocytosis (suppression of white cell production in the bone marrow).

- The same principle applies to any drug that can cause agranulocytosis.

- A sore throat in such patients can be the first sign of a life-threatening infection.

Hoarseness

- Hoarseness is caused when there is inflammation of the vocal cords in the larynx (laryngitis).
- Laryngitis is typically caused by a self-limiting viral infection.
- It is usually associated with a sore throat and a hoarse, diminished voice.
- Antibiotics are of no value and symptomatic advice which includes resting the voice, should be given. The infection usually settles within a few days and referral is not necessary.

- When this infection occurs in babies, infants or small children, it can cause croup (acute laryngotracheitis) and present difficulty in breathing and stridor In this situation, referral is essential.

- When hoarseness persists for more than 3 weeks, especially when it is not associated with an acute infection, referral is necessary.

- There are many causes of persistent hoarseness, some of which are serious. For example, laryngeal cancer can present in this way and hoarseness may be the only early symptom. A doctor will normally refer the patient to an ear, nose and throat (ENT) specialist for accurate diagnosis.

Dysphagia

- Difficulty in swallowing can occur in severe throat infection.
- It can happen as a complication of tonsillitis. This will usually result in a hospital admission where an operation to drain the abscess may be necessary and high-dose parenteral antibiotics may be given.
- Most bad sore throats will cause discomfort on swallowing, but not true difficulty and do not necessarily need referral unless there are other reasons for concern.
- Dysphagia, when not associated with a sore throat, always needs referral

- **Appearance of throat**
- It is commonly thought that the presence of white spots, exudates or pus on the tonsils is an indication for referral or a means of differentiating between viral and bacterial infection, but this is not always so.

- Unfortunately, the appearance can be the same in both types of infection and sometimes the throat can appear almost normal without exudates in a streptococcal (bacterial) infection.

Thrush

- An exception not to be forgotten is candidal (thrush) infection that produces white plaques.
- However, these are rarely confined to the throat alone and are most commonly seen in babies or the very elderly.
- It is an unusual infection in young adults and may be associated with more serious disorders that interfere with the body's immune system, for example, leukaemia, HIV and acquired immune deficiency syndrome (AIDS), or with immunosuppressive therapy (e.g. steroids).
- The plaques may be seen in the throat and on the gums and tongue.

Glandular fever

- Glandular fever is a viral throat infection caused by the Epstein–Barr virus. It is well known because of its tendency to leave its victims debilitated for some months afterwards.

- The infection typically occurs in teenagers and young adults, with peak incidence between the ages of 14 and 21 years. It is known as the ‘kissing disease’.

- A severe sore throat may follow 1 or 2 weeks of general malaise.

- The throat may become very inflamed with creamy exudates present.

- There may be difficulty in swallowing because of the painful throat.

- Glands (lymph nodes) in the neck and axillae (armpits) may be enlarged and tender.

When to refer
Sore throat lasting 1 week or more
Recurrent bouts of infection
Hoarseness of more than 3 weeks' duration
Difficulty in swallowing (dysphagia)
Failed medication

- **Treatment timescale**
- Patients should see their doctor after 1 week if the sore throat has not improved.

Management

- Most sore throats are caused by viral infections and are self-limiting in nature, with 90% of patients becoming well within 1 week of the onset of symptoms.
- The pharmacist can offer a selection of treatments aimed at providing some relief from discomfort and pain until the infection subsides.
- Oral analgesics are first-line treatment.
- A systematic review found that simple analgesics *(paracetamol, aspirin* and *ibuprofen*) are very effective at reducing the pain from sore throat.
- Lozenges and pastilles have a soothing effect.

- *Flurbiprofen lozenges* are licensed for sore throat in adults and children aged 12 years and over.

- one lozenge is sucked or dissolved in the mouth every 3–6 h as required, to a maximum of five lozenges.

Mouthwashes and sprays

- *Anti-inflammatory (e.g. benzydamine)*
- *Benzydamine* is an anti-inflammatory agent that is absorbed through
- the skin and mucosa and has been shown to be effective in reducing
- pain and inflammation in conditions of the mouth and throat.

- *Benzydamine spray* can be used in children of 6 years and over, whereas the mouthwash may only be recommended for children over 12 years of age.

- *Local anaesthetic (e.g. benzocaine)*
- *Benzocaine* and *lidocaine* are available in throat sprays.

- *Lozenges and pastilles*
- Lozenges and pastilles can be divided into three categories.
  - Antiseptic (e.g. *cetylpyridinium*)
  - Antifungal (e.g. *dequalinium*)
  - Local anaesthetic (e.g. *benzocaine*)

- *Diabetes*
- Mouthwashes and gargles are suitable and can be recommended.
- Sugar-free pastilles are available but the sugar content of such products is not considered important in short-term use.

Allergic rhinitis (hay fever)

- Seasonal allergic rhinitis (hay fever) affects 10–15% of people in the United Kingdom, and millions of patients rely on OTC medicines for treatment.

- The symptoms of allergic rhinitis occur after an inflammatory response involving the release of histamine, which is initiated by allergens being deposited on the nasal mucosa.

- Allergens responsible for seasonal allergic rhinitis include grass pollens, tree pollens and fungal mould spores.

- Perennial allergic rhinitis occurs when symptoms are present all year round and is commonly caused by the house dust mite, animal dander and feathers.

- Some patients may suffer from perennial rhinitis, which becomes worse in the summer months.

What you need to know

- Age (approximate)
  - Baby, child, adult
- Duration
- Symptoms
  - Rhinorrhoea (runny nose)
  - Nasal congestion
  - Nasal itching
  - Watery eyes
  - Irritant eyes
  - Discharge from the eyes
  - Sneezing
- Previous history
- Associated conditions
  - Eczema
  - Asthma
- Medication

- **Age**
- Symptoms of allergic rhinitis may start at any age, although its onset is more common in children and young adults (the condition is most common in those in their 20s and 30s).

- There is frequently a family history.

- **Duration**
- Sufferers will often present with seasonal rhinitis as soon as the pollen count becomes high.
- Symptoms may start in April when tree pollens appear
- Hay fever peaks between the months of May and July, when grass pollen levels are highest
- Anyone presenting with a summer cold, perhaps of several weeks' duration, may be suffering from hay fever.
- Fungal spores are also a cause and are present slightly later, often until September.
- People can suffer from what they think are mild cold symptoms for a long period, without knowing they have perennial rhinitis.

Allergic rhinitis can be classified as:

- *Intermittent*. Occurs less than 4 days/week or for less than 4 weeks
- *Persistent*. Occurs more than 4 days/week and for more than 4weeks
- *Mild*. All of the following – normal sleep, normal daily activities, sport, leisure, normal work and school, symptoms not troublesome
- *Moderate*. One or more of the following – abnormal sleep; impairment of daily activities, sport, leisure, problems caused at work or school, troublesome symptoms

Symptoms

- *Rhinorrhoea*
- The discharge is often thin, clear and watery, but can change to a thicker, coloured, purulent one.
- This suggests a secondary infection, although the treatment for allergic rhinitis is not altered.
- There is no need for antibiotic treatment.
- *Nasal congestion*
- The inflammatory response caused by the allergen produces vasodilation of the nasal blood vessels and so results in nasal congestion.
- Severe congestion may result in headache and occasionally earache.
- Secondary infection such as otitis media and sinusitis can occur

- *Nasal itching*
- Nasal itching commonly occurs. Irritation is sometimes experienced on the roof of the mouth.

- *Eye symptoms*
- The eyes may be itchy and also watery; it is thought these symptoms are a result of tear duct congestion and also a direct effect of pollen grains being caught in the eye, setting off a local inflammatory response.

- Irritation of the nose by pollen probably contributes to eye symptoms too. People who suffer severe symptoms of allergic rhinitis may be hypersensitive to bright light (photophobic) and find that wearing dark glasses is helpful.

- *Sneezing*
- In hay fever, the allergic response usually starts with symptoms of sneezing, then rhinorrhoea, progressing to nasal congestion.
- Classically, symptoms of hay fever are more severe in the morning and in the evening.
- This is because pollen rises during the day after being released in the morning and then settles at night.
- Patients may also describe a worsening of the condition on windy days as pollen is scattered, and a reduction in symptoms when it rains, or after rain, as the pollen clears.
- Conversely, in those allergic to fungal mould spores, the symptoms worsen in damp weather.

Previous history

- There is commonly a history of hay fever going back over several years.
- However, it can occur at any age, so the absence of any previous history does not necessarily indicate that allergic rhinitis is not the problem.
- The incidence of hay fever has risen during the last decade.
- Pollution, particularly in urban areas, is thought to be at least partly responsible for the trend.
- Perennial rhinitis can usually be distinguished from seasonal rhinitis by questioning about the timing and the occurrence of symptoms.
- People who have had hay fever before will often consult the pharmacist when symptoms are exacerbated in the summer months.

Danger symptoms/associated conditions

- tightness of the chest,
- wheezing,
- shortness of breath or
- coughing,

- immediate referral is advised. These symptoms may herald the onset of an asthmatic attack.

When to refer

Wheezing and shortness of breath

Tightness of chest

Painful ear

Painful sinuses

Purulent conjunctivitis

Failed medication

Management

- Management is based on whether symptoms are intermittent or persistent and mild or moderate.

- Options include
  - antihistamines,
  - nasal steroids and
  - *sodium cromoglicate* (*sodium cromoglycate*) in formulations for the nose and eyes.

- Patients with symptoms that do not respond to OTC products can be referred to the doctor at a later stage.

- Pharmacists also have an important role in ensuring that patients know how to use any prescribed medicines correctly (e.g. steroid nasal sprays, which must be used continuously for the patient to benefit).

Antihistamines

- Many pharmacists would consider these drugs to be the first-line treatment for mild-to-moderate and intermittent symptoms of allergic rhinitis.
- They are effective in reducing sneezing and rhinorrhoea, less so in reducing nasal congestion.
- Non-sedating antihistamines available OTC include *acrivastine, cetirizine* and *loratadine.*
- All are effective in reducing the troublesome symptoms of hay fever and have the advantage of causing less sedation than some of the older antihistamines.
- *Cetirizine* and *loratadine* are taken once daily, while *acrivastine* is taken three times daily.

- While drowsiness is an unlikely side effect of any of the three drugs, patients might be well advised to try the treatment for a day before driving or operating machinery.

- *Loratadine* may be less likely to have any sedative effect than the other two, but the incidence of drowsiness is extremely small.

- Older antihistamines such as *promethazine* and *diphenhydramine* have a greater tendency to produce sedative effects.

Decongestants

- Oral or topical decongestants may be used short term to reduce nasal congestion alone or in combination with an antihistamine.

- They can be useful in patients starting to use a preventer such as a nasal corticosteroid (e.g. *beclometasone*) or *sodium cromoglicate* where congestion can prevent the drug from reaching the nasal mucosa.

- Eye drops containing an antihistamine and sympathomimetic combination are available and may be of value in troublesome eye symptoms,

Steroid nasal sprays

- *Beclometasone nasal spray* (aqueous pump rather than aerosol version) and *fluticasone metered nasal spray* can be used for the treatment of seasonal allergic rhinitis.

- A steroid nasal spray is the treatment of choice for moderate–to severe nasal symptoms that are continuous.

- The steroid acts to reduce inflammation that has occurred as a result of the allergen's action.

- Regular use is essential for full benefit to be obtained and treatment should be continued throughout the hay fever season.

- Dryness and irritation of the nose and throat as well as nosebleeds have occasionally been reported; otherwise side effects are rare.

- *Beclometasone* and *fluticasone nasal sprays* can be used in patients over
- 18 years of age for up to 3 months.

- They should not be recommended for pregnant women or for anyone with glaucoma.

- The FDA approved the switches of Nasacort and Flonase from being available only by prescription to being obtainable over the counter on October 11, 2013, and on July 23, 2014, respectively.

TABLE: CURRENTLY AVAILABLE INS BRANDS[4-6]

Active Ingredient	Brand	Status
Beclomethasone dipropionate	Qnasl	Prescription only
Beclomethasone dipropionate monohydrate	Beconase AQ	Prescription only
Budesonide	Rhinocort Aqua	Prescription only
Ciclesonide	Omnaris Zetonna	Prescription only
Fluticasone furoate	Veramyst	Prescription only
Fluticasone propionate	Flonase Allergy Relief	Over the counter
Mometasone furoate monohydrate	Nasonex	Prescription only
Triamcinolone acetonide	Nasacort Allergy 24HR	Over the counter

INS = intranasal corticosteroid.

Sodium cromoglicate

- *Sodium cromoglicate* is available OTC as nasal drops or sprays and as eye drops.
- *Cromoglicate* can be effective as a prophylactic if used correctly.
- It should be started at least 1 week before the hay fever season is likely to begin and then used continuously.
- There seem to be no significant side effects, although nasal irritation may occasionally occur.
- *Cromoglicate eye drops* are effective for the treatment of eye symptoms that are not controlled by antihistamines.