Respiratory Problems Lecture1

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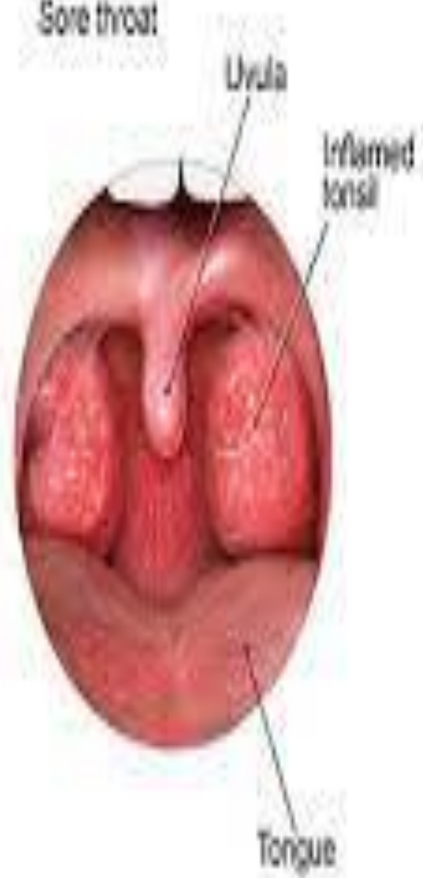
Part II

SORE THROAT

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

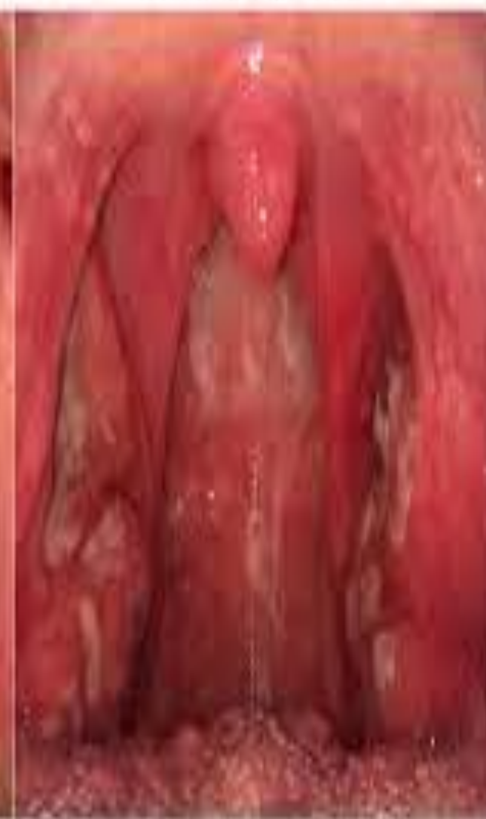
- Most sore throats that present in the pharmacy are caused by **viral infection (90%),** with only **1** in **10** being due to **bacterial infection**.
- Even where there is bacterial infection, antibiotics make little difference on outcome; therefore, treatment with antibiotics is unnecessary in most cases.
- Clinically, it is difficult to differentiate between viral infections and bacterial infections. The majority are self-limiting.

Healthy throat



Viral pharyngitis

bacterial pharyngitis



SIGNIFICANCE OF QUESTIONS AND ANSWERS

- **Age**
- Establishing who the patient is will influence the choice of treatment and the decision whether referral to the GP is necessary. **Streptococcal (bacterial)** throat infections are more likely **in children of school age**.
- **Duration**
- Most **sore throats** are self-limiting and will be better within **7 days**. If a sore throat has been present for longer, then the patient should be referred to the GP for further advice.

- **Severity**

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

- **Associated symptoms**

- Cold, 'bunged-up' nose and cough may be associated with a sore throat. There may also be a fever and general aches and pains.

- Both **difficulty in swallowing** (**dysphagia**), or **hoarseness** lasting longer **than 3 weeks**, are indications for referral.

- **Loss of taste** or **smell** (or alteration in them) is now a recognised feature of **COVID-19**, which can also cause **sore throat**. If this is suspected, the patient should consider staying at home and follow the latest guidance on COVID testing.

Previous history

- Recurrent bouts of infection, such as tonsillitis in the past, would mean that referral is best.

Smoking habit

- 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 smoking.

Present medication

- The pharmacist should establish whether any medication has been tried to treat the symptoms.
- **Steroid inhalers** (e.g. ***beclometasone*** 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.
- It is also worthwhile checking the patient's inhaler technique. **Poor technique** with metred-dose inhalers can lead to large amounts of the inhaled drug being deposited at the back of the throat. If it is suspected, device that will help coordination, such as a spacer, or perhaps a different inhaler, might be needed.

- Any patient taking ***carbimazole*** and presenting with a **sore throat** should be referred immediately. A rare side effect of *carbimazole* is **agranulocytosis** (i.e. suppression of white cell production in the bone marrow).

- The same principle applies to any other drug that can cause agranulocytosis, including ***methotrexate*** and ***azathioprine***, which are commonly used as disease-modifying drugs for long-term conditions. In such patients, a sore throat can be the first sign of a life-threatening infection.

SYMPTOMS FOR DIRECT REFERRAL

1) Hoarseness

- **Hoarseness** is caused by inflammation of the vocal cords in the larynx (i.e. **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 hoarseness persists for more than 3 weeks, especially when it is **not** associated with an acute infection, referral to the GP is necessary.
- There are many causes of persistent hoarseness, and some of them are serious. For example, **laryngeal cancer** can present in this way and hoarseness may be the only early symptom. A doctor will normally refer such a patient to ENT specialist for accurate diagnosis.

2) Dysphagia

- Difficulty in swallowing can occur in severe throat infections. Sometimes, the infection causes **pain**, making swallowing very uncomfortable.
- Dysphagia can also happen when an abscess develops in the region of the tonsils **(quinsy)** as a complication of tonsillitis. This condition 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.

3) Appearance of throat

- In a **sore throat**, the tonsils may swell and become red, and pus may appear as white spots on them. Symptoms typically get **worse over 2–3 days** and then gradually go away, usually within a week. This condition is often described as tonsillitis and does not normally require treatment. If an exudate is present, then this may increase the likelihood of a bacterial infection, but as an isolated finding, it has poor diagnostic value.

4) Thrush

- **Candidal (thrush) infection** produces white plaques, but 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, e.g. **leukaemia**, **HIV** and **acquired immunodeficiency syndrome** (AIDS), or with **immunosuppressive therapy** (e.g. oral corticosteroids or inhaled corticosteroids).

- The **plaques** may be seen in the throat and on the gums and tongue. When they are scraped off, the surface is raw and inflamed.
- Referral is advised if thrush is suspected, and the throat is sore and painful.

5) Glandular fever (infectious mononucleosis)

- GF, also known as **infectious mononucleosis**, is a viral throat infection caused by **the Epstein–Barr virus**. It can leave its victims debilitated for some months afterwards and is associated with **chronic fatigue syndrome** (also known as myalgic encephalomyelitis).
- The infection is characterised by a **sore throat** that grumbles on with swollen lymph glands and also often causes **general malaise**, **fatigue**, **muscle aches**, **chills**, **sweats**, **loss of appetite** and **headache**.
- The most common age group affected is between **15** and **25** years of age.

- 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.
- The diagnosis can be confirmed with a **blood test**, although this may not become positive until the second week of the illness; if the test is negative and there is a strong suspicion of GF, it should be repeated after a further week.
- Antibiotics are of no value; in fact, if *ampicillin* or *amoxicillin* is given during the infection, a **measles-type rash** is likely to develop in **80%** of those with GF. Treatment is aimed at symptomatic relief.

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
- ✓High temperature >38°C

Use of clinical scoring systems

- Research shows that having three or four **'Centor' criteria** has some predictive value for those people who are most likely to have more **serious infection** and **who are more likely to derive some benefit from antibiotic** treatment. There are 4 criteria:

- Presence of tonsillar exudate
- Presence of tender neck glands
- History of fever
- Absence of cough – this suggests absence of cold symptoms

A recent refinement of this system, increasingly used by GPs, is **the Fever PAIN score :**

- Fever in last 24 h
- Severely inflamed tonsils
- Pus on tonsils, attends within 3 days and no cough or cold symptoms.

Treatment timescale

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

MANAGEMENT

- Most sore throats are **self-limiting** in nature, with **90%** of patients feeling better or improving within ***1 week*** of the onset of symptoms.

Oral analgesics

- ***Paracetamol**, **aspirin*** and ***ibuprofen*** can provide rapid and effective relief from sore throat pain. A systematic review showed no benefit of adding other analgesic constituents.

- The use of *aspirin* has gone out of favour because of the increased risk of adverse effects.

- ***Flurbiprofen lozenges*** are licensed for sore throat in adults and children aged **12 years** and **over**, and there is evidence that they provide pain relief. They contain **8.75 mg** of ***flurbiprofen*** (a non-steroidal anti-inflammatory drug) and **one lozenge** is sucked or dissolved in the mouth every 3–6 h as required, to a maximum of five lozenges. *Flurbiprofen lozenges* can be used for up to 3 days at a time.

Mouthwashes and sprays

- **Anti-inflammatory** ***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.

- ***Side effects*** have occasionally been reported and include **numbness** and **stinging** of the mouth and throat. ***Benzydamine spray*** can be used in children **under 12** years of age, whereas the **mouthwash** may only be recommended for children **over 12** years of age.

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* and *lidocaine*, also both available in throat sprays)

- Lozenges containing ***cetylpyridinium chloride*** have been shown to have **antibacterial action**. Local anaesthetic lozenges will numb the tongue and throat, and can help to ease soreness and pain.

PRACTICAL POINTS

Diabetes

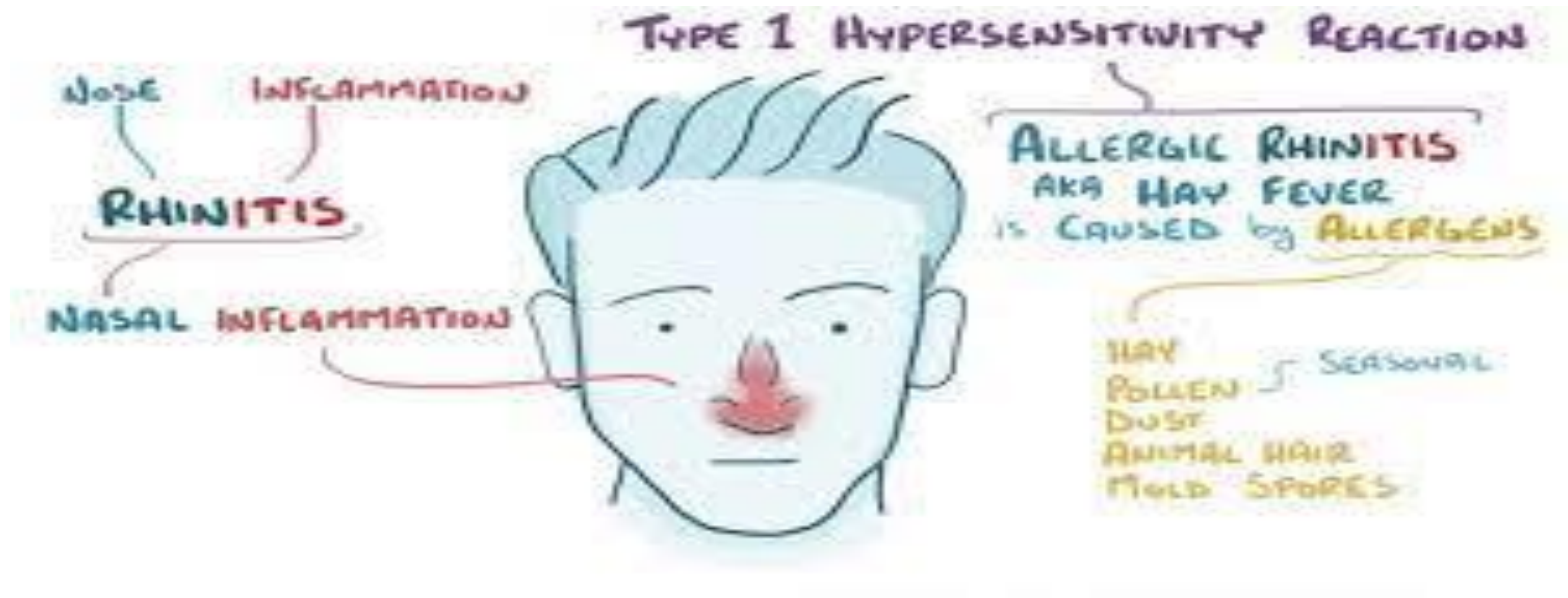
- Mouthwashes and gargles are suitable and can be recommended. **Sugar-free pastilles** are available, but the sugar content in such products is not considered important in short-term use.

Mouthwashes and gargles

- Patients should be reminded that mouthwashes and gargles **should not be swallowed**.

ALLERGIC RHINITIS (HAY FEVER)

- Seasonal allergic rhinitis (hay fever) affects up to **25%** of people in the UK, at one time or another, 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 and respiratory tract mucosa.

- The allergy may also affect the eyes. Allergens responsible for seasonal allergic rhinitis include **grass pollens**, **tree pollens** and **fungal mould spores**.

- Allergic rhinitis on exposure to **cats** or **dogs** is also relatively common, and sometimes **horses**, **rabbits** and **rodents** (such as pet guinea pigs, hamsters and rats) and animals dander may trigger these symptoms.

- **Perennial allergic rhinitis** occurs when symptoms are present all year round and this is commonly caused by **the house dust mite**, **animal dander**, and **feathers** in cushions, pillows and duvets. Some patients may suffer from a form of perennial rhinitis that becomes worse in the summer months (possibly aggravated by tree or grass pollen allergy).

SIGNIFICANCE OF QUESTIONS AND ANSWERS

Age

- Symptoms of allergic rhinitis may start at any age, although it is more common in children and young adults. There is frequently a family history of **atopy in allergic rhinitis sufferers** (the typical atopy triad is **asthma**, **hay fever** and **eczema**).
- **Adults** are more likely to develop **perennial allergic rhinitis** than **younger people**.
- People who drive or operate machinery also need to avoid treatment that causes drowsiness.

Duration

- Sufferers will often present with seasonal rhinitis as soon as the pollen count becomes **high around late March** when **tree pollens appear**.
- **Hay fever** peaks between the months of **May** and **July** when **grass pollen levels are highest**, and spells of good weather commonly cause patients to seek the pharmacist's advice.
- Anyone presenting with a summer cold, perhaps of several weeks' duration, may be suffering from **hay fever.**

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 4 weeks.
- ***Mild:*** With all of the following – normal sleep; normal daily activities, such as sports and leisure; and normal work and school; symptoms not troublesome.
- ***Moderate or severe:*** With one or more of the following – abnormal sleep; impairment of daily activities, such as sports and leisure; and problems caused at work or school; symptoms troublesome.

Symptoms

- **Rhinorrhoea**

- A runny nose is commonly in allergic rhinitis. 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 usually 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, but is rare.

- **Nasal itching**

- Nasal itching commonly occurs.

- **Eye symptoms**

- The eyes may be **itchy** and also **watery**; it is thought these symptoms are a result of **tear duct congestion** and also that of **a direct effect of pollen grains** being **caught in the eye**, setting off a local inflammatory response. The scleral conjunctivae (white of the eye) can become very swollen.

- People who suffer severe symptoms of allergic rhinitis may also be **hypersensitive to bright light** (**photophobic**) and find that wearing dark glasses is helpful.

- **Sneezing**

- In hay fever, the allergic response usually starts with **sneezing** and then **rhinorrhoea**, progressing to **nasal congestion**.
- Pollen rises during the day after being released in the morning and then settles at night, so symptoms of hay fever are classically **more severe in the morning** and **in the evening**.

Previous history

- There is commonly a history of hay fever going back over several years.
- The incidence of hay fever has risen during the last few decades. **Pollution**, particularly in **urban areas**, is thought to be at least partly responsible for this trend.
- **Perennial rhinitis** can usually be distinguished from **seasonal rhinitis** by questioning about the timing and the occurrence of symptoms.

- **Wheezing**

- **Difficulty in breathing**, possibly with a **cough,** suggests *either* asthma or aggravation of asthma by **pollen allergy**.
- Some sufferers experience asthma symptoms only **during the hay fever season** (i.e. **seasonal asthma**). These episodes can be quite **severe** and hence **require referral**.

➢ Earache and facial pain

- As with colds and flu, **allergic rhinitis** can be complicated by increased fluid pressure in the middle ear or in the sinuses as mucosal swelling causes blockage of drainage of fluid caused by allergic inflammation.
- Secondary bacterial infection in the middle ear or the sinuses can occur, but is rare.

➢ Purulent conjunctivitis

- Occasionally, but rarely, allergic conjunctivitis is complicated by **a secondary infection.**
- When this occurs, the eyes become more painful (**gritty sensation**) and **redder**, and the discharge changes from being clear and watery to coloured and sticky (purulent) . If this is suspected, referral may be needed.

When to refer

- ✓Diagnosis unclear
- ✓Wheezing and shortness of breath
- ✓Tightness of chest
- ✓Painful ear
- ✓Painful sinuses
- ✓Purulent conjunctivitis
- ✓Severe symptoms only partially relieved by OTC preparations
- ✓Failed medication

Treatment timescale

- Improvement in symptoms should occur within a **few days**. If no improvement is noted after **7 days**, consider referral to the GP.

MANAGEMENT

- Management is based on whether symptoms are **intermittent** or **persistent** and **mild** or **moderate**.
- Options include antihistamines, nasal corticosteroids and *sodium cromoglicate* in formulations for the nose and eyes.
- **Antihistamines** and **corticosteroid** nasal sprays are generally equally effective in the treatment of allergic rhinitis. Antihistamines usually work within a day, but corticosteroid sprays may take several days to build up an effect.

- The choice of treatment should be based on **the patient's symptoms** and **previous history**, where relevant, as well as **the patient's preference**.
- Many cases of hay fever can be managed with **OTC treatment**, and it is reasonable for the pharmacist to recommend treatment.
- Patients with symptoms that do not respond to OTC products can be referred to the GP at a later stage.

Antihistamines

- Many pharmacists 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**, but less so in reducing nasal congestion.
- **Non- sedating antihistamines** available OTC include ***acrivastine***, ***fexofenadine***, ***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***, ***fexofenadine*** and ***loratadine*** are taken once daily, **while *acrivastine*** is taken three times daily.
- For-sale OTC, ***loratadine*** can be recommended for children over 2 years of age, ***cetirizine*** for those over 6 years of age, and ***acrivastine*** and ***fexofenadine*** for those over 12 years of age.
- While drowsiness is an unlikely side effect of any of these drugs, patients might be well advised to try the treatment for a day before driving or operating machinery as drowsiness is still sometimes seen in some people. For students, similar advice can be given if exams are imminent.

- **Older antihistamines**, such as *promethazine* and *diphenhydramine*, have a greater tendency to produce sedative effects and are rarely used in hay fever these days.

- The shorter half-life of *diphenhydramine* (5–8 h compared with 8–12 h of *promethazine*) should mean less likelihood of a morning hangover/drowsiness effect.

- Other older antihistamines are relatively less sedative, such as ***chlorphenamine*** , but sedation can still occur in at least 1 in 10 patients.

Decongestants

- Oral or topical decongestants may be considered for **short-term use** 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. ***beclomethasone*** or ***sodium cromoglicate***), where congestion can prevent the drug from reaching the nasal mucosa.
- **Topical decongestants** can cause rebound congestion and should not be used for more than 1 week.
- **Eye drops** containing an antihistamine and sympathomimetic combination (*antazoline* with *xylometazoline)* are available and may be of value in troublesome eye symptoms, particularly when symptoms are intermittent.

Steroid nasal sprays

- ***Beclometasone nasal spray*** (aqueous pump rather than aerosol version), ***budesonide nasal spray***, ***fluticasone metered nasal spray*** and ***mometasone nasal spray*** can be used for the treatment of hay fever and are available OTC for this indication.
- *A corticosteroid 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 to obtain full benefit and treatment should be continued throughout the hay fever season.

If symptoms of hay fever are already present, the patient needs to know that it is likely to take several days before the full treatment effect is reached.

- **Dryness** and **irritation** of the **nose** and **throat**, as well as **nosebleeds**, have occasionally been reported
- *Beclometasone, budesonide, fluticasone* and *mometasone nasal sprays* can be provided OTC to patients **over 18 years** of age for up to 3 months.
- They should not be recommended for pregnant women or for anyone with glaucoma.

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.
- ***Cromoglicate eye drops*** are usually highly effective in the treatment of eye symptoms that are not controlled by antihistamines and work very quickly (within an hour). However, *cromoglicate* should be used continuously to obtain full benefit.
- These drops contain the preservative *benzalkonium chloride*, which is occasionally associated with allergy. Drops containing benzalkonium should not be used at the same time as wearing soft contact lenses.

Barrier nasal sprays

- Thixotropic gel nasal sprays are available; the theory is that a **barrier is formed** that **prevents allergens reaching the nasal mucosa**.
- **PRACTICAL POINTS**
- 1. Car windows and air vents should be kept closed while driving. Otherwise, there can be a high pollen concentration inside the car. Some car ventilation and air-conditioning units will filter out pollen.
- 2. When house dust mite is identified as a problem, regular cleaning of the house to maintain dust levels at a minimum can help.