Clinical Pharmacy
Allergic Rhinitis

Seasonal Allergic Rhinitis, Conjunctivitis, Hayfever

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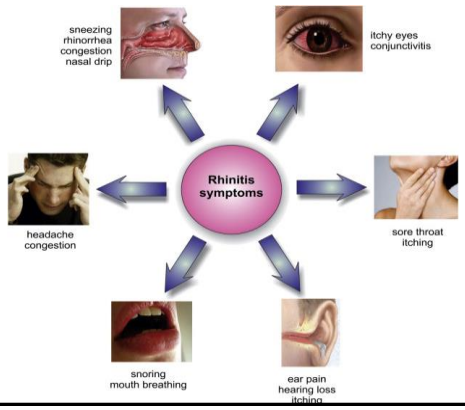
Lecture 4

Seasonal Allergic Rhinitis

- **Rhinitis** is simply inflammation of the nasal lining.
- It is characterized by **rhinorrhoea**, nasal **congestion**, **sneezing**, and **itching** .
- **Seasonal allergic rhinitis (SAR)** and/or **conjunctivitis**, more commonly known as **hay fever**, are **allergic reactions** in the nasal mucosa and the conjunctiva of the eye associated with the **presence of pollens in the atmosphere**.
- Hay fever occurs at certain times of year.
- The most common causes are:
  - **Tree** pollens in **spring**.
  - **Grass** pollen in **summer**.



Patient Assessment with Allergic Rhinitis:

A-Symptoms:

1. The patient usually have all ***four*** classical symptoms of nasal **itch, sneeze, rhinorrhoea, and nasal congestion** , however, the patient might also suffer from ocular irritation giving rise to **allergic conjunctivitis.**
2. The **nasal discharge** is often thin, watery, and clear, but it may be change to colored and purulent one which may indicate secondary infection**.**
3. **However the treatment is not altered and antibiotic are usually not needed.**

Patient Assessment with Allergic Rhinitis:

A-Symptoms:

- Symptoms of allergic rhinitis may be **confused with that of common cold;** the two conditions may be distinguished by the following points

Allergic rhinitis	Common cold
Ocular symptoms present	Usually **no ocular** symptoms
Symptoms continue for as long as patient is exposed to allergens , **often for several weeks**	**Symptoms** last for about **4-to several days**
Symptoms occur at **the same time each year**.	Can occur at any time of the year but more usually in the **winter months**
Only affect **isolated individuals**.	**Highly contagious** (affects other family members and may be common within the community

B-Associated symptoms

1. **Earache and facial pain:** allergic rhinitis can be complicated by secondary bacterial infections in middle ear (**otitis media**) or the sinuses (**sinusitis**), therefore patients with **painful ear or painful sinuses required referral**.
2. When associated with symptoms of **asthmatic attack** such **as wheezing, tightness of the chest, shortness of breath** (SOB, immediate **referral** is advised.
3. **Eye symptoms:** The eyes may be **itchy** and also **watery (allergic conjunctivitis)**, occasionally, this may be complicated by a secondary bacterial infection in which the discharge change from **clear** watery to **sticky colored (purulent).**

C-Seasonal variation:

- **Repetitive and predictable** seasonal symptoms characterize **SAR** .

D-Triggers:

- Classically **symptoms** of hay fever **are more severe during the day.**
- This is because **pollen rises** during the day after being released in the morning and then settled at night.
- Hay fever symptoms worsen also on **windy days**.
- While symptoms **may be reduced after rain** and when the patient stay indoors .

E-Family history:

- If a first degree relative suffers from **atopy** then **hay fever** is the most likely cause of rhinitis.

Note: Atopy: A form of hypersensitivity characterized by a familial tendency.

Atopy refers to a genetic predisposition to develop allergic reactions due to an exaggerated immune response to common environmental allergens

F-Medication:

1. If one or more **appropriate** remedies have been tried **without success** (failed medication), **referral** is required
2. Medication of other condition:

- To avoid drug-drug interactions
- A number of oral medications causing rhinitis including alpha adrenoceptors antagonists (e.g. **terazosin**).

When to refer ?

1. Wheezing and shortness of breath
2. Tightness of chest
3. Painful ear
4. Painful sinuses
5. Failed medication
6. Medicine-induced rhinitis

❑ **Treatment timescale:**

- If no improvement is noted after **5 days** of therapy, the patient should be referred.

Management:

A-Nonpharmacological advices for SAR

1. Stay **indoors** and keep all **windows closed**.
2. **Avoid going out**, particularly in the early **evening and mid-morning**.
3. Wear close-fitting **sunglasses** when outside, and a **mask** if symptoms are severe.
4. In the car, **keep windows closed**, especially on motorways.
5. Keep the air conditioning system on, if there is one.

Management:

B-Pharmacological therapy:

- Pharmacists now possess a wide range of options to treat SAR. Medications used can be divided into two categories:

1. **Topical:**
   - Corticosteroids
   - Antihistamines
   - Mast cell stabilizers
   - Decongestants
2. **Systemic**:
   - Antihistamine
   - Decongestants

1-Topical therapy:

A-Steroid nasal sprays:

- **Beclometasone, fluticasone, and triamcinolone:**

1. A steroid nasal spray is the **treatment of choice** for **moderate to severe nasal symptom** and superior to oral antihistamine.
2. They can be used in patients aged over 18 years **for up to 3 months.**
3. Ideally treatment should be start **at least 2 weeks before symptoms are expected.**
4. **Regular use is essential for full benefit, it should be continued throughout the hay fever season** and should be repeated each year.
5. If the symptoms already present, the patient needs to know that **it take several days** before full effect is reached.
6. **Side effects:** are (nosebleed, dryness and irritation of nose and throat) but these are mild and transient.

1-Topical therapy:

A-Steroid nasal sprays:

- **Beclometasone, fluticasone, and triamcinolone:**
- **Note**: Patient sometimes **alarmed by the term (steroid),** therefore the pharmacist needs to take account of these concerns.
- They should not be recommended for anyone with **glaucoma**
- **Corticosteroid nasal sprays** are **suspensions** and the bottle should be **shaken** before use.

- Manufacturer recommend that Steroids **should not be used during pregnancy** and **breastfeeding** due to insufficient evidence to establish safety.
- However, exposure data do suggest that they are safe.
- They are considered to be safe for use during pregnancy.

Recommended adult doses of nasal steroids	
Drug	Dose
Beclometasone spray (50 mcg/ one spray)	**100 mcg (2 sprays) twice daily**, dose to be administered into each nostril, **reduced to 50 mcg twice daily**, dose to be administered into each nostril, dose to be **reduced** when symptoms controlled; **maximum 400 mcg per day**
Fluticasone spray (50 mcg/ one spray)	**100 mcg once daily**, to be administered into each nostril preferably in the **morning**, **increased** if necessary to **100 mcg twice daily**; **reduced** to **50 mcg once daily**, dose to be administered into each nostril, dose to be reduced when control achieved.
Triamcinolone spray (55 mcg/ one spray)	**110 mcg once daily**, dose to be sprayed into each nostril, **reduced to 55 mcg once daily**, dose to be sprayed into each nostril, reduce dose when control achieved

A-Steroid nasal sprays:

- **The patients should be advised about the following points :**

1. Gargle/rinse mouth after each use to prevent oral fungal infections
2. Proper administration technique and cleaning technique
3. Inform the patient's about cushing symptoms
4. About **adrenal insufficiency symptoms:** nausea, anorexia, fatigue, dizziness, dyspnea, weakness, joint pain, depression

B-Mast cell stabilizers (Sodium cromoglicate):

- This is available OTC as **nasal drop** or **spray** (4%) and as **eye drop**.
- Sodium cromoglicate is a prophylactic agent, but their place in nasal symptoms of allergic rhinitis is **limited because it is less effective than steroids and it need more frequent administration** (4-6 times a day).
- It is preferably **started 1 week before the hay fever season** is likely to begin and then used continuously
- There are no significant side effects although **nasal irritation** may occur.
- It has no drug interactions and can be given to all patient groups.
- Clinical experience has shown cromoglicate to be **safe in pregnancy**, and expert opinion considers sodium cromoglicate to be safe in breastfeeding.

C-Topical Decongestants… common cold

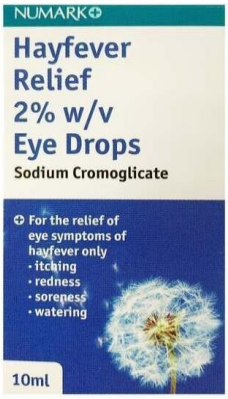
D-Topical antihistamine:

- **Azelastine** is a nasal spray used in allergic rhinitis.
- Topical antihistamines are considered **less effective than topical corticosteroids** but probably more effective than cromoglicate.
- It is suggested that treatment should **begin 2–3 weeks before the start of the hay fever** season.
- The dose: apply **twice daily**; increased if necessary to 4 times a day, maximum **duration** of treatment **is 6 weeks**.

E-Topical ocular preparations:

1-Most eye symptoms will be controlled by **oral antihistamines**, however if symptoms are persistent or particularly troublesome, topical ocular preparations are effective.

2-**Ocular preparations** include **sodium cromoglicate** and decongestants-antihistamine (**Naphazoline-Antazoline**).



2-Systemic (oral) therapy:

A-Systemic (oral) decongestants: like pseudoephedrine, phenylphrine and ephedrine which constrict the dilated blood vessels of the nose.

B-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.

2-Systemic (oral) therapy:

B-Antihistamines

- Note: The maximum effect of antihistamines is achieved if **they are block histamine release before it occurs**.
- For maximum effectiveness, therefore, antihistamines **should be taken when symptoms are expected** rather than after they have been **started**.
- Patients who suffer breakthrough symptoms using a **once daily preparation** (loratadine, cetirizine) may benefit from changing to **acrivastine**, as three-times-a-day dosing may confer better symptom control.

C-Combination products: sympathomimetics + Antihistamine.

Clinical Pharmacy
Sore throat

Sore Throat

- **Most sore throat which present in the pharmacy will be caused by viral infection (90%)** with only one in ten (10%) being due to bacterial infection so the treatment with **antibiotics is not indicated in most cases.**
- Clinically, differentiation between viral and bacterial sore throat is extremely difficult.
- Patients will present with a sore throat as an **isolated symptom** or as part of a **cluster of symptoms** that include rhinorrhoea, cough, malaise, fever, headache and hoarseness (laryngitis).

Sore Throat

- **Causes of sore throat and their relative incidence:**

Incidence	Causes
Most likely	Viral infection
Likely	Streptococcal infection
Unlikely	Glandular fever, trauma
Very unlikely	Carcinoma, medicines

Patient assessment with sore throat:

A-Age:

- Although viral causes are the most common cause, **streptococcal infections** are more prevalent in people **under the age of 30**, particularly those of school age (5–10 years) and young adults (15–25 years old).

B-Duration:

- Most sore throats are self limiting and will be better **within 7-10 days**. Therefore, sore throat lasting more than **2 weeks should be referred**.

C- Severity:

- If the sore throat is described as **extremely painful**, especially in the absence of cold, cough or catarrhal symptoms, then **referral** should be recommended.
- if there no improvement **within 24-48 hours**.

Patient assessment with sore throat:

D-Previous history:

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

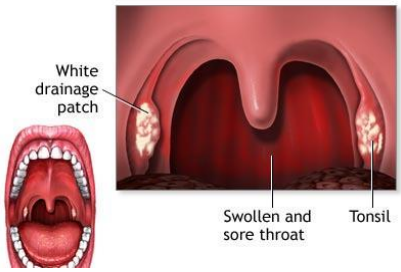
E-Associated symptoms:

- A 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).

Symptoms that may need referral:

1. **Dysphagia:** True difficulty in swallowing (dysphagia). (i.e. not just caused by pain but mechanical blockage) this should be referred.
2. **Hoarseness:** when hoarseness persist **for longer than 3 weeks**, referral is necessary
3. **Apperance of throat:** Unfortunately the appearance of throat can be the same in both viral and bacterial sore throat (which may be normal appearance or the presence of white spots, exudates or pus on tonsils)

- However, **marked tonsillar exudates accompanied with high temperature and swollen glands** required referral (possible bacterial cause and may require antibiotics).



Symptoms that may need referral:

Features of viral and bacterial sore throat						
	Age	**Tonsillar/ Pharyngeal Exudate**	**Duration**	**Cervical Glands**	**Cough Present**	**Other symptoms**
Viral infection	Any age	Possible, but Generally limited	3–7 days	Normal	Common	Low-grade fever, headache
Bacterial infection	School children	Often present and can be substantial	3–7 days	Swollen	Rare	High-grade fever, possible rash

F-Present medications:

- A rare **complication** of certain medication is **agranulocytosis** (suppression of WBC production in the bone marrow which can manifest as fever, **sore throat**, and ulceration.
  - The patient will probably present with signs of infection, including fever and chills.
  - Examples of drugs that cause this adverse event are: **Captopril, carbimazole**, cytotoxics, pencillamine, sulfasalazine, neuroleptics and clozapine.
- **Steroid inhalers can cause hoarseness**. Generally, they tend to do this at high doses. It is worthwhile checking the patient's inhaler technique. If you suspect this . (1)is the problem, discuss with the doctor

When to refer

1. Duration of more than 2 weeks
2. Marked tonsillar exudate, accompanied with a high temperature and swollen glands
3. Drug reaction Adverse
4. People taking medicines that can interfere with the immune response (e.g., immunosuppressants, disease modifying antirheumatics)
5. Dysphagia
6. Associated skin rash
7. Hoarseness of more than 3 weeks' duration
8. Recurrent bouts of infection
9. Failed medication

- **Treatment timescale:** Referee patients if the Sore throat has not improved in one week.

Management:

- The majorities of sore throats **are viral and are self-limiting.** Medication therefore aims to **relieve symptoms and discomfort**

A-Oral analgesics:

- Simple systemic analgesics such as paracetamol, aspirin, and ibuprofen are effective in **reducing the pain associated with sore throat**
- The patient can be advised to take the analgesics **regularly basis** (**not 'as needed'**) to sustain the pain relief

Management:

A-Oral analgesics:

- **Note: Flurbiprofen is a non-steroidal anti-inflammatory drug (NSAID) that is available as a lozenge formulation for the relief of sore throat.**
- It is used for adults and children aged 12 years and over.
- The dosage is one lozenge 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

Management:

B-Locally acting preparations (lozenges and pastilles):

1. **Lozenges** (**regardless of ingredients**) produces saliva, which lubricates and sooth the inflamed tissues.
2. **Gargles or lozenges?**

- Gargles have very short contact time with inflamed mucosa and therefore any effect will be short lived. A lozenge or a pastille is preferable, as contact time will be longer.

Management:

B-Locally acting preparations (lozenges and pastilles):

3. **Non medicated demulcents pastilles** such as that containing lemon, honey, glycerin… may be as effective as anything for soothing the sore throat (as in the above note).

- They can be taken as **often as required** to stop the throat feeling dry, thereby relieving discomfort.
- Some products contain volatile oil such **as menthol** , and **eucalyptus oil** which produce a sensation of **clearing the blocked nose** which may accompany the sore throat.

Management:

B-Locally acting preparations (lozenges and pastilles):

- Most products do contain a sugar base, but the amount of sugar is too small to substantially affect blood glucose control and therefore can be recommended to diabetic patients, Several sugar free lozenges are available for throat.

4. **local anesthetics (e.g. benzocaine) are included in a number of marketed products (throat lozenges) and used** for patient who finds the swallowing uncomfortable. The Local anesthetics can **cause sensitization** in some individuals with prolong use, so usage should be limited to **5 days**.

- Local anaesthetics should not be used at all by children or elderly people