

CLINICAL PHARMACY IN RESPIRATORY SYSTEM CARE

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Common Respiratory problems

- A. Colds and flu*
- B. Cough*
- C. Sore throat*
- D. Allergic rhinitis*

Colds and Flu

- ▣ The common cold comprises a mixture of viral upper respiratory tract infections (URTIs).
- ▣ Although colds are self-limiting, many people choose to buy OTC medicines for symptomatic relief.
- ▣ Some of the ingredients of OTC cold remedies may interact with prescribed therapy, occasionally with serious consequences.
- ▣ Therefore, careful attention needs to be given to taking a medication history and selecting an appropriate product.

What you need to know

- ▣ Age (approximate)
 - Child or adult
- ▣ Duration of symptoms
- ▣ Symptoms:
 - Runny/blocked nose
 - Summer cold
 - Sneezing/coughing
 - Generalized aches/headache
 - High temperature
 - Sore throat
- Earache
- Facial pain/frontal headache
- Flu
- ▣ Previous history
- ▣ Asthma
- ▣ Allergic rhinitis
- ▣ Bronchitis
- ▣ Heart disease
- ▣ Present medication

When to refer ?

- ▣ Earache not settling with analgesic
- ▣ Facial pain/frontal headache
- ▣ In the very young
- ▣ In the very old
- ▣ In those with heart or lung disease, e.g. chronic bronchitis
- ▣ With persisting fever and productive cough
- ▣ With delirium
- ▣ With pleuritic chest pain
- ▣ Asthma

Management

- ❑ The use of OTC medicines in the treatment of colds and flu is widespread and such products are heavily advertised to the public.
- ❑ There is little doubt that appropriate symptomatic treatment can make the patient feel better; the placebo effect also plays an important part here.
- ❑ For some medicines used in the treatment of colds, particularly older medicines, there is little evidence available from which to judge effectiveness.
- ❑ The pharmacist's role is to select appropriate treatment based on the patient's symptoms and available evidence, and taking into account the patient's preferences.

Management

1. Decongestants
2. Antihistamines
3. Zinc
4. Echinacea
5. Vitamin C
6. Cough remedies
7. Analgesics
8. Products for sore throats

Decongestants

- ▣ *Sympathomimetics*, (e.g. pseudoephedrine) can be effective in reducing nasal congestion.
- ▣ Nasal decongestants work by constricting the dilated blood vessels in the nasal mucosa. The nasal membranes are effectively shrunk, so that drainage of mucus and circulation of air are improved and the feeling of nasal stuffiness is relieved.
- ▣ These medicines can be given orally or applied topically. Tablets and syrups are available, as are nasal sprays and drops.
- ▣ If nasal sprays/drops are to be recommended, the pharmacist should advise the patient not to use the product for longer than 7 days. Rebound congestion (rhinitis medicamentosa) can occur with topically applied but not oral sympathomimetics.
- ▣ The decongestant effects of topical products containing oxymetazoline or xylometazoline are longer lasting (up to 6 h) than those of some other preparations such as ephedrine.

Antihistamines

- ❑ Antihistamines can reduce some of the symptoms of a cold: runny nose (rhinorrhoea) and sneezing.
- ❑ These effects are due to the anticholinergic action of antihistamines. The older drugs (e.g. chlorphenamine (chlorpheniramine), promethazine) have more pronounced anticholinergic actions than do the non-sedating antihistamines (e.g. loratadine, cetirizine, acrivastine).
- ❑ Antihistamines are not so effective at reducing nasal congestion.
- ❑ Some (e.g. diphenhydramine) may also be included in cold remedies for their supposed antitussive action or to help the patient to sleep (included in combination products intended to be taken at night).

Cough

- ▣ Coughing is a protective reflex action caused when the airway is being irritated or obstructed.
- ▣ Its purpose is to clear the airway so that breathing can continue normally.
- ▣ The majority of coughs presenting in the pharmacy will be caused by a viral URTI.
- ▣ They will often be associated with other symptoms of a cold. The evidence to support the use of cough suppressants and expectorants is not strong but some patients report finding them helpful.

What you need to know

- ▣ Age (approximate)
 - Baby, child, adult
- ▣ Duration
- ▣ Nature
 - Dry or productive
- ▣ Associated symptoms
 - Cold, sore throat, fever
 - Sputum production
 - Chest pain
 - Shortness of breath
 - Wheeze
- ▣ Previous history
 - Chronic bronchitis
 - Asthma
 - Diabetes
 - Heart disease
 - Gastro-oesophageal reflux
 - Smoking habit
- ▣ Present medication

When to refer ?

- ▣ Cough lasting 2 weeks or more and not improving
- ▣ Sputum (yellow, green, rusty or blood-stained)
- ▣ Chest pain
- ▣ Shortness of breath
- ▣ Wheezing
- ▣ Whooping cough or croup
- ▣ Recurrent nocturnal cough
- ▣ Suspected adverse drug reaction
- ▣ Failed medication

Management

- ▣ The choice of treatment depends on the type of cough.
- *Suppressants* (e.g. pholcodine) are used to treat unproductive coughs,
- *Expectorants* such as guaifenesin (guaiphenesin) are used in the treatment of productive coughs.
- *Demulcents* like Simple Linctus that soothe the throat are particularly useful in children and pregnant women as they contain no active ingredients.

Cough suppressants

- ▣ Where there is no identifiable cause (underlying disorder), cough suppressants may be useful; e.g. if sleep is disturbed.
- ▣ Controlled trials have not confirmed any significant effect of cough suppressants over placebo in symptom reduction.
 - a) *Codeine/pholcodine*
 - b) *Dextromethorphan*

Demulcents

- ▣ Preparations such as glycerin, lemon and honey or Simple Linctus are popular remedies and are useful for their soothing effect.
- ▣ Their pleasant taste makes them particularly suitable for children but their high syrup content should be noted.
- ▣ Productive coughs should not be treated with cough suppressants because the result is pooling and retention of mucus in the lungs and a higher chance of infection, especially in chronic bronchitis.

Expectorants

- ▣ A simple expectorant mixture may serve a useful placebo function and is inexpensive.
- ▣ Two mechanisms have been proposed for expectorants.
 1. They may act directly by stimulating bronchial mucus secretion, leading to increased liquefying of sputum, making it easier to cough up.
 2. Alternatively, they may act indirectly via irritation of the gastrointestinal (GI) tract, which has a subsequent action on the respiratory system resulting in increased mucus secretion. This latter theory has less convincing evidence than the former to support it.
- *Guaifenesin (guaiphenesin)*

Cough remedies: other constituents

a) *Antihistamines*

Examples used in OTC products include diphenhydramine and promethazine. Theoretically these reduce the frequency of coughing and have a drying effect on secretions, but in practice they also induce drowsiness.

b) *Sympathomimetics*

Pseudoephedrine is the most commonly used oral decongestant included in cough and cold remedies for its bronchodilatory and decongestant actions.

b) *Theophylline*

As a bronchodilator

Sore throat

- ❑ 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 one in ten being due to bacterial infection, so that 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.
- ❑ Once the pharmacist has excluded more serious conditions, an appropriate OTC medicine can be recommended.

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

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

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. 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. There is some evidence that benzydamine spray is effective in relieving sore throat pain.

Management

- a) **Oral analgesics**
- b) **Mouthwashes and sprays:** Anti-inflammatory (e.g. benzydamine)
- c) **Local anaesthetic** (e.g. benzocaine and lidocaine are available in throat sprays.)
- d) **Lozenges and pastilles:** can be divided into three categories:
 1. antiseptic (e.g. cetylpyridinium)
 2. antifungal (e.g. dequalinium)
 3. local anaesthetic (e.g. benzocaine).

Allergic rhinitis

- ❑ Seasonal allergic rhinitis (hay fever) affects 10–15% of people in the UK 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

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.
- ▣ The choice of treatment should be rational and based on the patient's symptoms and previous history where relevant.
- ▣ 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).

Management

- a) Antihistamines
- b) Decongestants
- c) Steroid nasal sprays
- d) Sodium cromoglicate
- e) Topical antihistamines

Respiratory symptoms for direct referral

- Chest pain
- Shortness of breath
- Wheezing
- Sputum