Seeking treatment for a cough is still one of the most common reasons why patients visit the pharmacy. Self-limiting coughs, such as those relating to a common cold or other viral upper respiratory tract infection, usually improve within a few days with or without treatment. However, a cough can also be a sign of a more serious medical problem. Before one can recommend treatment, it is important to establish the cause of the cough.

Understanding coughs

A person usually coughs when their airway is irritated and this is part of a natural reflex which protects the lungs. During a cough, inhaled particles and secretions are cleared from the airways; this also reduces the chance of infection. Coughs may be categorised according to the duration of the cough.

• Acute coughs

Acute coughs are typically caused by upper respiratory tract infections such as bronchitis or a postnasal drip, but may also be caused by more serious diseases such as pneumonia. Acute coughs last less than three weeks. Viral respiratory tract infection is the major cause for acute cough in children.

• Subacute coughs

These coughs linger for three to eight weeks after other acute symptoms of a respiratory infection have resolved e.g. influenza.

• Chronic coughs

About 90% of chronic coughs (coughs that last more than eight weeks) are caused by either asthma, postnasal drip or acid reflux from the stomach. The only symptom in a patient with a mild form of asthma may be a persistent cough at night or with exercise. Other causes include the use of certain medicines such as blood pressure medication called angiotensin-converting enzyme (ACE) inhibitors, chronic bronchitis, lung cancer, tuberculosis or fungal infections of the lungs.

Treatment

There is an array of cough preparations available and despite the limited evidence for efficacy, cough preparations are still used extensively. Cough mixtures can be divided into those suitable for a dry cough (non-productive, i.e. with no sputum), or those deemed more appropriate for a productive cough (producing sputum, i.e. wet and chesty).

Bronchodilators

Bronchodilators such as theophylline and orciprenaline open the airways and ease breathing.

Mucolytics

Mucolytics such as acetylcysteine (N-acetylcysteine), carbocysteine and bromhexine reduce the thickness of secretions and may be helpful in cases associated with chronic, tenacious sputum production.

Cough suppressants or antitussives

Antihistamines, demulcents and centrally-acting cough suppressants are the three main categories of cough suppressants.

• Antihistamines such as diphenhydramine and promethazine are sometimes included in cough preparations. They have a drying effect on nasal secretions and reduce the frequency of coughing.

• Demulcents such as simple linctus, glycerine, honey and lemon do not contain any active ingredients and have a soothing effect.

• Cough suppressants such as dextromethorphan, noscapine, codeine phosphate and pholcodine act directly on the coughing centre in the brain where they suppress the urge to cough.
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Expectorants

Expectorants such as ipecacuanha, guaiphenesin, sodium citrate, glyceryl guaiacolate and ammonium chloride help to thin or loosen the mucus, which can then be coughed up.

Phytopharmaceutical/Phytomedicine

Herbal medicines have been used since ancient times for coughs. However, most of these products have not been subjected to rigorous clinical trials.

Although more studies are needed:

- Some studies have demonstrated that bronchitis-related symptoms among both children and adults improved or resolved with the use of ivy herbal extract. There are many different ingredients in ivy leaves, such as flavonoids, phenyl carboxylic acids or essential oil and saponines. However, saponines are thought to be primarily responsible for the therapeutic effects. Ivy leaves may help to thin or liquefy mucus in the airways, and may help to relax airways and reduce airway inflammation. Consequently, mucus can be cleared more easily from the airways, it is easier to breathe and coughing frequency is reduced. It may also assist in moisturising and soothing irritated and dry surfaces in the airways. In addition, preliminary results suggest that ivy leaves may improve lung function.
- There is preliminary evidence showing that the South African geranium (Pelargonium sidoides) may improve symptoms in individuals with acute bronchitis.

Points to consider before recommending a cough treatment

- Treatment is seldom necessary for a self-limiting or acute cough.
- A simple linctus or a mixture of honey and lemon may be considered for a mildly irritating cough, as long as the patient does not have a bacterial infection or bronchospasm. These products are suitable for pregnant women and children. Honey should be avoided in children.
- When selecting a treatment for a chronic cough the intention of treatment should be to eliminate the underlying cause.
- Suppressing a cough is seldom necessary. However, a cough suppressant may be recommended for a troublesome night-time cough. For example, provided there is no serious underlying cause, a cough suppressant such as dextromethorphan may be recommended short-term for a cough that is dry, severe, interrupts sleep and if the cough did not respond to a simple linctus.
- Cough suppressants are not suitable for a productive cough as their use may result in the retention and pooling of mucus and increase the chance of developing infection.
- Cough suppressants and expectorants have opposite effects and should not be used together.

Cough medicine and children

- The use of bronchodilators are not recommended for the treatment of acute cough in non-asthmatic children.
- The use of over-the-counter (OTC) cough and cold medication in children under two years of age has been restricted by the US medicines regulatory authority (FDA – Food and Drug Administration).
- The use of cough and cold preparations containing dextromethorphan, pholcodine, guaifenesin and certain nasal decongestants and antihistamines are not recommended in Australia and the UK for children under the age of six years.
- In South Africa, promethazine-containing products are contraindicated in children under the age of two years.

“In order to suggest a suitable product to treat a cough one needs to understand the aetiology of the cough and know how cough medicines work”

Lifestyle measures

In order to help loosen mucus and relieve an irritated throat, patients can be advised to:

- Drink enough fluids such as water, juice or soup.
- Use a cool-mist humidifier or steam vaporiser.
- Not smoke and to avoid second-hand smoke.
- Suck hard candy or cough lozenges as this may assist with a dry, tickling cough provided there is no risk of choking and if the patient is over three years of age.
- Avoid allergens (such as dust, animal dander and pollens from grasses or trees) and irritants (such as cigarette smoke or air pollution) that can cause a cough.

When to refer

Patients should be referred to the doctor if they have been coughing for more than two weeks with no improvement (with or without appropriate medication). In addition, patients should be referred if the sputum is coloured (yellow, green, rust-coloured or blood-stained) or if they are experiencing:

- Chest pain
- Shortness of breath or wheezing
- Symptoms suggestive of whooping cough (after a spasm of coughing, one can hear a “whoop” when the breath is drawn in) or croup (a hollow barking cough with difficulty in breathing)
- Recurrent night-time cough

“When selecting a treatment for a chronic cough the intention of treatment should be to eliminate the underlying cause”
Summary
In order to suggest a suitable product to treat a cough one needs to understand the aetiology of the cough and know how cough medicines work – “The best way to treat a cough is to treat its cause”.

Bibliography