Antitussives and expectorants

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Introduction

A cough is a protective reflex that helps keep the airways clear so that breathing can continue normally. Cough remains one of the most common complaints that motivates patients to seek medical attention, especially during the winter months.

Types of coughs

It is normal for people to cough once in a while, but sometimes a cough is a symptom of an illness.

- An acute cough (lasting three weeks or less) is usually caused by a viral infection of the upper respiratory tract, such as the common cold.
- A cough that lasts longer than three weeks following a viral upper respiratory tract infection is often called a 'post-viral' cough.
- A chronic cough is usually defined as a cough that lasts eight weeks or longer. The most common causes of chronic cough are postnasal drip, asthma and acid reflux from the stomach.

Coughs are described as either 'productive' (wet, chesty and producing phlegm) or 'non-productive' (dry, tickly or tight and not producing phlegm). Older children and adults typically cough material up, but younger children usually swallow it. A productive cough should be encouraged because it enables the removal of secretions from the airways that, if retained, could impair breathing and the ability of the lungs to resist infection. A non-productive cough serves no useful physiological purpose as no phlegm is produced and the cough can make it hard for the patient to sleep and function optimally.

This classification of cough into 'wet' and 'dry' has been challenged and international experts have called for a removal of this classification. Nonetheless, most healthcare professionals still ask patients about the nature of the cough (wet or dry) before recommending a cough mixture. This is because, traditionally, a 'wet' cough is treated with an expectorant to help bring up the phlegm, while a dry cough is treated with a cough suppressant or 'antitussive' to stop the coughing.

Treatment of cough

Although little evidence has been obtained in clinical trials, the choice of treatment for an acute viral cough still depends on the type of cough.

- Productive coughs may be treated with an expectorant, such as guaiphenesin.
- Non-productive coughs may be treated with an antitussive, such as dextromethorphan or pholcodine.

Expectorants

Expectorants found in cough mixtures include guaiphenesin, ammonium chloride, sodium citrate, glyceryl guaiacolate and ipecacuanha. The dose of guaiphenesin is worth highlighting in that the amount required to produce expectoration in an adult is 100–200 mg. As such, some available products do not contain a sufficiently high dose of guaiphenesin in order to be effective. Other traditional expectorants include squill, creosote and menthol, but their doses used in most cough mixtures are probably too low in order to be effective as expectorants.

Antitussives

There are three main types of antitussives, namely demulcents, opioids and antihistamines.

- **Demulcents**

Demulcent remedies include honey, glycerine and lemon, simple drinks and linctuses. These work to soothe and coat the throat, thereby reducing coughing frequency. These remedies may be particularly suitable for children.

- **Opioids**

Opioid-like antitussives include codeine, pholcodine and dextromethorphan. They work on the coughing centre in

the brain to reduce cough. Codeine is no more effective than pholcodine or dextromethorphan for suppression of the cough and is associated with a higher incidence of side-effects.

- **Antihistamines**

Antihistamines that are used in cough mixtures include the first-generation antihistamines such as diphenhydramine, promethazine, phenyltoloxamine and triprolidine. These antihistamines are thought to reduce the frequency of coughing and also dry up nasal secretions preventing a postnasal drip, making them useful when a cough and a cold occur together. Their sedative effect may also be useful if the cough is disturbing sleep.

A word on combination products

- The combination of an expectorant and a decongestant (e.g. pseudoephedrine, ephedrine, phenylephrine or phenylpropanolamine) can be useful in treating a productive cough.
- The combination of an antihistamine and an opioid-like antitussive may be useful when given as a night-time dose to minimise coughing that is disturbing sleep.
- Since expectorants promote coughing to help bring up phlegm and antitussives work to reduce coughing, the combination of an expectorant and an antitussive is not considered to be therapeutically sound.

In summary

Most acute viral coughs resolve within two to three weeks, with or without treatment with a cough mixture. People who smoke and have a cough can expect a longer time period before the cough resolves. While the evidence to support the use of cough mixtures for an acute viral cough is not strong, many patients report benefit from using a cough mixture. The pharmacist's assistant, when recommending a product, should consider the nature of the cough as well as the age of the patient and ensure that patients use the product in the appropriate recommended doses. Patients who have not responded to an appropriate medication within two weeks should be referred to the doctor.

References

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