

# Colds, flu and coughing: over-the-counter products for pharyngitis and tonsillitis

Van Schoor J, BScHons, MPharm  
Amayeza Information Centre

Correspondence to: Jacky van Schoor, e-mail: jacky@amayeza-info.co.za

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## Abstract

Pharyngotonsillitis is an inflammatory condition of the pharyngeal wall. Respiratory viruses are the major causes of pharyngitis, while bacteria account for 5-30% of cases. Once treatment of the underlying aetiology is considered and addressed, management of pharyngotonsillitis focuses on providing symptomatic relief. A variety of systemic and topical therapies are available. This brief review discusses over-the-counter medicines that may be considered for both adults and children.

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## Introduction

Pharyngotonsillitis is an inflammatory condition of the pharyngeal wall and is sometimes divided into pharyngitis and tonsillitis.<sup>1</sup> Respiratory viruses are the major causes of pharyngitis, while bacteria, especially group A beta-haemolytic streptococci (*Streptococcus pyogenes*), account for 5-30% of cases.<sup>1</sup> Although group A beta-haemolytic streptococcal pharyngitis is usually self-limited, antibiotics are recommended to prevent suppurative and nonsuppurative (acute rheumatic fever and glomerulonephritis) post-streptococcal complications.<sup>1</sup> However, even when treating documented bacterial pathogens, antibiotics contribute only modestly to the speed with which the symptoms of pharyngitis resolve.<sup>2,3</sup> Usually, a sore throat that is caused by an infection lasts a few days. Generally, symptoms resolve between three and seven days in approximately 50-90% of people, respectively.<sup>3</sup>

Once treatment of the underlying aetiology has been considered and addressed, i.e. antibiotic therapy provided to patients with bacterial pharyngitis and tonsillitis, the focus of managing the condition should be on providing symptomatic relief.<sup>3</sup> A variety of systemic and topical therapies are commonly used to provide symptomatic relief from pharyngitis and tonsillitis.<sup>3</sup>

## Symptomatic relief

Despite its common occurrence, data that support treatments for the symptomatic management of acute pharyngitis and tonsillitis are limited.<sup>2</sup>

## Systemic therapy

Several systemic analgesics for the relief of sore throat pain have been investigated, although paracetamol and nonsteroidal anti-inflammatory drugs (NSAIDs) have been the most rigorously studied for this indication.<sup>2</sup>

Systemic paracetamol and NSAIDs such as ibuprofen have been shown to alleviate sore throats in randomised controlled trials and systematic reviews.<sup>2,3,4</sup> In addition, NSAIDs may alleviate fever and inflammation.<sup>3</sup> Whether or not one analgesic is better than another when treating a sore throat has not been well established, but data from several small trials have suggested that aspirin and NSAIDs are more effective than paracetamol.<sup>2</sup> The patient should be advised to take the analgesic regularly to sustain pain relief until the symptoms have resolved.<sup>4</sup> Aspirin should be avoided in children who are under the age of 16 years because of its possible association with Reye's syndrome.<sup>3</sup>

## Topical therapy

Several topical therapies are available to treat a sore throat. These are supplied in the form of throat sprays, oral rinses or gargles and lozenges:<sup>2,3</sup>

- Throat sprays can be used by adults and children over six years of age.
- Oral rinses or gargles may be recommended for use in adults and children over 12 years of age. Younger children may struggle to rinse or gargle without swallowing the medication.
- Lozenges may be used by adults and children, but pose a choking hazard and are best avoided in young children (< 3-4 years of age).

The advantages of local therapies over systemic administration include direct application of pain relief intervention at a high concentration at the site of inflammation and the decreased risk of side-effects.<sup>2</sup>

In a comparative exercise that used methylene blue dye, oral rinses were shown to be more effective at coating the oral cavity and base of the tongue, while throat sprays were more effective at coating the posterior pharynx. This study suggests that oral rinses may be more useful when treating complaints that affect the mouth and tongue, while throat sprays may be more helpful when treating conditions that affect the back of the throat.<sup>3</sup>

Another study used scintigraphy to compare the delivery efficacy of technetium-labelled lozenges, sprays and gargles in the mouth and throat. Lozenges that were sucked achieved a higher initial deposition in the mouth and throat, and had lower rates of clearance than throat sprays or gargles. This suggests that lozenges could be more effective for the symptomatic treatment of pharyngitis in adults.<sup>2</sup>

The components of topical therapies that are used to treat a sore throat are discussed according to three categories, anti-inflammatory, antiseptic and anaesthetic.<sup>2-4</sup>

*Anti-inflammatory activity*

Flurbiprofen lozenges (Strepsils Intensive®) may be used by adults and children over the age of 12 years to treat a sore throat. One lozenge should be sucked every three to six hours, with a maximum of five lozenges per day. Treatment should be limited to three days.<sup>4</sup>

Benzylamine has anti-inflammatory, analgesic and anaesthetic activity. It has been shown to be effective in reducing pain and inflammation in the mouth and throat. Benzylamine is available as lozenges (Andolex®), a spray (Andolex®) and as an oral rinse (Andolex® and Andosept®).

*Antiseptic activity*

Chlorhexidine and cetylpyridinium (Cepacol® gargle and Goldex® throat lollies), cetylpyridinium/benzyl alcohol

**Table I: Mouth and throat preparations<sup>5</sup>**

Product	Composition	Anti-inflammatory	Antiseptic	Anaesthetic
Andolex® solution, spray and lozenges	Benzylamine	√		√
Andolex-C® oral rinse, spray, lozenges and an oral gel	Benzylamine	√		√
	Chlorhexidine gluconate		√	
Cepacaine® anaesthetic lozenges (blackcurrant flavour) and Medi-Keel® A lozenges	Benzocaine			√
	Cetylpyridinium chloride		√	
Cepacol®** plain lozenges	Cetylpyridinium chloride		√	
	Benzyl alcohol		√	√
Cepacol® gargle and Goldex® throat lollies	Cetylpyridinium chloride		√	
Medi-Keel® throat spray and Septosol® throat spray	Phenol		√	√
Medi-Keel® throat gargle	Dibucaine			√
	Benzocaine			√
	Benzyl alcohol		√	
	Cetylpyridinium chloride		√	
Orochlor® solution and spray solution	Benzocaine			√
	Chlorhexidine gluconate		√	
Strepsils®*** lozenges	2,4-dichlorobenzyl alcohol		√	
	Amylmetacresol		√	
Strepsils® numbing lozenges	2,4-dichlorobenzyl alcohol		√	
	Amylmetacresol		√	
	Lignocaine			√
Strepsils® Intensive lozenges	Flurbiprofen	√		

\*: Lozenges are available in raspberry, eucalyptus-menthol, honey-lemon and orange.

\*\* : Lozenges are available in menthol, honey-lemon and blackcurrant.

\*\*\*: Lozenges are available in original, honey-lemon, orange with vitamin C and eucalyptus-menthol.

(Cepacol<sup>®</sup> lozenges), and 2,4-dichlorobenzyl alcohol/ amylmetacresol (Strepsils<sup>®</sup> Original and Strepsils Soothing Honey/Lemon<sup>®</sup>) soothe and moisten the throat and have an antimicrobial action.<sup>4</sup>

A study in the UK evaluated the pain-relieving effects of 2,4-dichlorobenzyl alcohol/ amylmetacresol (Strepsils<sup>®</sup>) vs. placebo lozenges in 310 adult patients with acute sore throats due to an upper respiratory tract infection. Throat soreness was reduced in 66% of 2,4-dichlorobenzyl alcohol/ amylmetacresol-(Strepsils<sup>®</sup>) treated patients, compared to 16% of the placebo group within five minutes of lozenge use.<sup>2</sup>

Phenol is described as having both an antiseptic and an anaesthetic effect. A phenol throat spray (Septosol<sup>®</sup> and Medi-Keel<sup>®</sup>) is available for use in adults and in children over six years of age.<sup>2,5</sup>

#### *Anaesthetic activity*

Benzocaine and lidocaine (lignocaine) and dibucaine numb the tongue and throat and help ease soreness and pain.<sup>4</sup> Menthol has cooling and anaesthetic properties and is included in some combination products.<sup>2</sup> Several products that are indicated for the symptomatic management of sore throats are combination products that contain an antiseptic and a local anaesthetic or analgesic (see Table I).

#### **Alternative therapies**

Saltwater gargles are a traditional stand-by for the relief of throat pain. Although the benefit of gargling with salt

water has not been proved in clinical trials, this treatment is unlikely to be harmful.<sup>3</sup> Most formulations suggest a quarter to a half a teaspoon of salt per cup of warm water (250 ml).<sup>3</sup>

Other interventions include sipping warm beverages, e.g. honey or lemon tea, cold beverages, or eating cold or frozen desserts, e.g. ice cream or popsicles.<sup>2,3</sup>

Many herbal teas and drops are marketed to relieve sore throats. These products may contain several active ingredients, often including demulcents such as honey, pectin and glycerine which are purported to relieve throat irritation by forming a soothing film over the mucous membranes. However, efficacy data on these products are supported by a weak evidence base.<sup>2</sup> Nonetheless, a randomised trial from Switzerland found that a herbal spray of echinacea and sage was as effective as a spray that contained chlorhexidine and lidocaine in providing relief from sore throat pain in adults.<sup>2</sup>

#### **References**

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