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[Intervention Review]

Over-the-counter medications for acute cough in children and adults in ambulatory settings

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ABSTRACT

Background

Acute cough due to upper respiratory tract infection (URTI) is a common symptom. Many health practitioners recommend non-prescription over-the-counter (OTC) medicines as a first-line treatment for cough, but there is little evidence as to whether these drugs are effective.

Objectives

To assess the effects of oral over-the-counter cough preparations for acute cough.

Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* Issue 2, 2004); MEDLINE (January 1966 to June Week 3, 2004); EMBASE (January 1990 to March 2004); and the UK Department of Health National Research Register (December 2003, <http://www.update-software.com/National/nrr-frame.html>). We also searched personal collections of references and reference lists of articles. We wrote to study investigators and pharmaceutical companies for information on further published or unpublished studies. There were no constraints based on language or publication status.

Selection criteria

Randomised controlled trials (RCTs) comparing oral OTC cough preparations with placebo in children and adults suffering from acute cough in ambulatory settings. We considered all cough outcomes (such as frequency and severity, continuous and categorical data, using different ways of measurement). The second outcomes of interest were adverse effects.

Data collection and analysis

Two investigators screened potentially relevant citations independently. Any differences at any stage of the review were resolved by discussion. We also extracted data and assessed the quality of studies independently. We contacted investigators for additional information and performed quantitative analysis when appropriate data were available.

Main results

Twenty four trials (17 in adults, seven in children) involving 3,392 people (2,876 adults and 516 children) were included.

RESULTS OF STUDIES IN ADULTS

1. Antitussives

Six trials compared antitussives with placebo. Codeine was no more effective than placebo in reducing cough symptoms. Two studies favoured dextromethorphan over placebo, whereas a third did not show an effect. Muguisteine was no more effective than placebo apart from a reduction of cough in a subgroup of participants with more severe night cough.

2. Expectorants

Two trials compared guaifenesin with placebo. In the larger study, 75 per cent of participants taking guaifenesin stated that the medicine was helpful compared to 31 per cent in the control group. In the second study, both groups showed improvement with respect to cough frequency and severity, with no statistically significant differences between groups.

3. Mucolytics

One trial compared a mucolytic with placebo. Active treatment reduced cough frequency and symptom scores on day four and eight.

4. Antihistamine-decongestant combinations

Two studies compared antihistamine-decongestant combinations with placebo. Antihistamine-decongestants were significantly more effective than placebo in one of the studies, whereas the other did not show any difference between the study groups.

5. Other drug combinations

Three studies compared combinations of drugs other than antihistamine-decongestant with placebo. Two studies were effective in reducing cough symptoms, and one study showed relief at night but not during the day.

6. Antihistamines

Three trials compared antihistamines with placebo. Antihistamines were no more effective than placebo in relieving cough symptoms.

RESULTS OF STUDIES IN CHILDREN

1. Antitussives

Antitussives were no more effective than placebo (one study)

2. Expectorants

No studies using expectorants met our inclusion criteria.

3. Mucolytics

The results of one trial favoured active treatment over placebo from day four until day 10.

4. Antihistamine-decongestant combinations

Two studies showed no difference between antihistamine-decongestant combinations and placebo.

5. Other drug combinations

One trial tested two paediatric cough syrups. Compared to placebo, both preparations showed a 'satisfactory response' in 46 per cent and 56 per cent of children compared to 21 per cent of children in the placebo group. One study compared an antitussive/bronchodilator combination in children, which showed no difference between the treatment groups.

6. Antihistamines

In one trial that tested antihistamines active treatment was no more effective than placebo.

Authors' conclusions

There is no good evidence for or against the effectiveness of OTC medicines in acute cough. The results of this review have to be interpreted with caution due to differences in study designs, populations, interventions and outcomes between studies. The numbers of studies in each group were small, and studies often showed conflicting results. Effect sizes in many studies were unclear and it is questionable as to whether all of the positive results are clinically relevant. More evidence about the effectiveness of OTC cough preparations would be helpful, as identification of effective self-care treatments may help reduce the burden of days lost at work due to acute cough as well as the number of consultations in primary care. Identification of ineffective preparations could avoid costs for consumers and health care providers.

PLAIN LANGUAGE SUMMARY

The evidence for effectiveness of over-the-counter cough medicines is weak

Acute cough is a common and troublesome symptom in people who suffer from acute upper respiratory tract infection (URTI). Many people self-prescribe over-the-counter (OTC) cough preparations and health practitioners often recommend their use for the initial treatment of cough. The results of this review suggest that there is no good evidence for or against the effectiveness of OTC medications in acute cough. The results of this review have to be interpreted with caution because the number of studies in each category of cough preparations was small. Many studies were of low quality and very different from each other, making evaluation of overall efficacy difficult.