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[Intervention Review]

Oral *Astragalus* (Huang qi) for preventing frequent episodes of acute respiratory tract infection in children

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ABSTRACT

Background

Acute respiratory tract infections (ARTIs) are common in children and can involve both upper and lower airways. Many children experience frequent ARTI episodes or recurrent respiratory tract infections (RRTIs) in early life, which creates challenges for paediatricians, primary care physicians, parents and carers of children.

In China, *Astragalus* (Huang qi), alone or in combination with other herbs, is used by Traditional Chinese Medicine (TCM) practitioners in the form of a water extract, to reduce the risk of ARTIs; it is believed to stimulate the immune system. Better understanding of the therapeutic mechanisms of *Astragalus* may provide insights into ARTI prevention, and consequently reduced antibiotic use.

Objectives

To assess the effectiveness and safety of oral *Astragalus* for preventing frequent episodes of acute respiratory tract infections (ARTIs) in children in community settings.

Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL, Issue 12, 2015), MEDLINE (Ovid) (1946 to 31 December 2015), Embase (Elsevier) (1974 to 31 December 2015), AMED (Ovid) (1985 to 31 December 2015), Chinese National Knowledge Infrastructure (CNKI) (1979 to 31 December 2015) and Chinese Scientific Journals full text database (CQVIP) (1989 to 31 December 2015), China Biology Medicine disc (CBM 1976 to 31 December 2015) and Wanfang Data Knowledge Service Platform (WanFang) (1998 to 31 December 2015).



Selection criteria

We included randomised controlled trials (RCTs) comparing oral *Astragalus* as a sole Chinese herbal preparation with placebo to prevent frequent episodes of ARTIs in children.

Data collection and analysis

We used standard Cochrane methodological procedures for this review. We assessed search results to identify relevant studies. We planned to extract data using standardised forms. Disagreements were to be resolved through discussion. Risk of bias was to be assessed using the Cochrane 'Risk of bias' tool. We planned to use mean difference (MD) or standardised mean difference (SMD) for continuous data and risk ratio (RR) or odds ratio (OR) to analyse dichotomous data, both with 95% confidence intervals (CIs).

Main results

We identified 6080 records: 3352 from English language databases, 2724 from Chinese databases, and four from other sources. Following initial screening and deduplication, we obtained 120 full-text papers for assessment. Of these, 21 were not RCTs; 55 did not meet the inclusion criteria because: participants were aged over 14 years; definition was not included for recurrent or frequent episodes;*Astragalus* preparation was not an intervention; *Astragalus* preparation was in the formula but was not the sole agent; the *Astragalus* preparation was not administered orally; or *Astragalus* was used for treatment rather than prevention of ARTI. A further 44 studies were excluded because they were not placebo-controlled, although other inclusion criteria were fulfilled.

No RCTs met our inclusion criteria.

Authors' conclusions

We found insufficient evidence to enable assessment of the effectiveness and safety of oral *Astragalus* as a sole intervention to prevent frequent ARTIs in children aged up to 14 years.

PLAIN LANGUAGE SUMMARY

Can oral Astragalus (Huang qi) prevent frequent acute respiratory tract infections in children?

Review question

We assessed evidence for the benefits and harms of oral *Astragalus* used alone to prevent frequent episodes of acute respiratory infections (ARTIs) in children aged up to 14 years, compared to a dummy treatment. ARTIs include colds, sore throats, laryngitis, influenza, bronchitis and pneumonia.

Background

Many therapies are used to prevent ARTIs, especially in children. *Astragalus*, is a widely used and available herbal therapy that has been used for thousands of years in China to help prevent ARTIs. It is thought to boost immunity. Almost one in five children experience frequent ARTIs and treatment accounts for up to 75% of all prescribed antibiotics for children. Because most ARTIs are caused by viruses, antibiotics are not effective in treating these illnesses.

Search date

We searched the literature up to 31 December 2015.

Study characteristics

We identified 6080 potentially relevant records. After removing duplicate records, and those that did not meet our inclusion criteria, we obtained 120 full-text studies. We carefully assessed these studies for possible inclusion. We excluded most studies because: they presented unclear diagnosis criteria; *Astragalus* preparation was used with other agents; or *Astragalus* was not compared with a dummy treatment. No studies met our inclusion criteria and so we were unable to analyse any results.

Study funding sources

We could not assess study funding sources.

Key results

We did not find any studies that compared use of oral *Astragalus* alone with a dummy treatment to prevent frequent episodes of ARTI in children aged up to 14 years. Well-designed, conducted and reported studies investigating this issue are needed to enable assessment in the future.

Quality of the evidence

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We could not assess evidence quality.

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