The effect of Echinacea on upper respiratory infection symptom severity and quality of life
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CRD summary
This review aimed to identify the current body of literature describing the effects of Echinacea on upper respiratory infection symptom severity and quality of life. The authors concluded that the findings of the studies are contradictory about whether Echinacea is beneficial. The review has a number of limitations and the authors’ conclusions may not be reliable.

Authors’ objectives
To identify the current body of literature describing the effects of Echinacea on upper respiratory infection (URI) symptom severity and quality of life.

Searching
MEDLINE, EMBASE, CINAHL, the Natural Medicines Comprehensive Database and the Cochrane CENTRAL Register were searched from inception to July 2005 for papers in the English language; the search terms were provided. Reference lists were also screened.

Study selection
Study designs of evaluations included in the review
Trials were eligible for inclusion.

Specific interventions included in the review
Studies of Echinacea alone or in combination with another herbal compound, vitamin or mineral were eligible for inclusion. The majority of the included studies evaluated E. purpurea; there were also studies of E. augustifolia, E. pallidae and combinations of two or more types. Most studies used Echinacea alone. All studies used a placebo control group.

Participants included in the review
Inclusion criteria for the participants were not specified. The included studies were of participants with experimentally inoculated rhinovirus, patients with recent URI onset and healthy participants. Apart from one study of children, the remaining studies were of adults.

Outcomes assessed in the review
Studies assessing quality of life using a quality of life questionnaire or symptom scale were eligible for inclusion. The majority of the included studies used a symptom severity scale (ranging from a 4-point to a 10-point scale of a varying number of symptoms). The SF-36 and a study-specific questionnaire were also used in one study.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.
Methods of synthesis
How were the studies combined?
The studies were individually summarised.

How were differences between studies investigated?
Differences between the studies were described in tables and the narrative.

Results of the review
Nine double-blind randomised controlled trials (n=2,012) were included.

The findings were mixed. Four of the studies showed statistically significant benefits of Echinacea over placebo, while the remaining studies reported no statistically significant differences. Data on effect sizes and confidence intervals were not reported.

Authors' conclusions
Studies are contradictory about the effect of Echinacea on URI symptom severity and quality of life. Although there were some positive effects, it would be inappropriate to attribute any quality of life benefit to Echinacea given the current data available. However, the possibility cannot be ruled out that Echinacea has a beneficial impact on quality of life.

CRD commentary
The review question was clearly stated, except in terms of the participants and study design. Several relevant databases were searched, though non-English language studies were excluded and no attempts to identify unpublished studies were made; relevant studies may therefore have been missed. It was unclear whether appropriate methods, such as duplicate study selection, were used to minimise error and bias in the review process. Study quality was not assessed and the data reported on participant outcomes were fairly limited. Although there was some discussion of differences between the studies, the authors did not generally go beyond reporting the results of the individual studies. Given the methodological weaknesses of this review, the authors' conclusions may not be reliable.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that further research into Echinacea is required.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.