

## **Echinacea Is Not Effective for Treatment of the Common Cold**

*Barrett BP, Brown RL, Locken K, et al. Treatment of the common cold with unrefined echinacea. A randomized, double-blind, placebo-controlled trial. Ann Intern Med 2002;137:939–46.*

### **Study Overview**

**Objective.** To assess the efficacy of echinacea at improving the severity or duration of symptoms from the common cold.

**Design.** Randomized, double-blind, placebo-controlled trial.

**Setting and participants.** 148 students at the University of Wisconsin in Madison, WI were recruited through campus advertisements and invited to participate if they reported at least 2 of 15 cold symptoms with a duration of less than 36 hours.

**Intervention.** The students were randomized to treatment with 2 *Echinacea* species capsules or an identical-appearing placebo.

**Main outcome measures.** Symptom severity was measured daily on a 9-point Likert scale and assessed 15 symptoms associated with the common cold. Symptom duration was defined as the number of days from enrollment until the patient reported that she or he was no longer ill.

**Main results.** No difference was found between the echinacea and placebo groups for either symptom severity or placebo. Difference in mean cold duration was  $-0.52$  day (95% confidence interval [CI],  $-1.09$ – $0.22$ ), favoring a shorter duration for placebo group. A multivariate model controlling for sex, date of enrollment, duration and severity of symptoms prior to enrollment, and use of nonprotocol medications found no significant treatment effect (adjusted hazard ratio, 1.24 [CI, 0.86–1.78]). Assessment of severity scores over time likewise showed no effect from the echinacea.

**Conclusion.** Unrefined echinacea had no detectable effect on cold symptom severity or duration.

### **Commentary**

Several high-profile publications in the last several years have called into question the efficacy of many popular alter-

native medicine modalities, including homeopathy [1], acupuncture [2], and the use of natural plant extracts [3]. All of these trials were negative, a finding that challenges the body of research demonstrating a beneficial treatment effect. How do we put these negative findings into context when much concurrent and prior research concludes the therapy is beneficial? As suggested by the authors of this well-executed trial, adherence to techniques that reduce bias and confounding should be the yardstick that helps prioritize contradictory evidence.

The trend in complementary and alternative medicine research is to evaluate alternative treatments with the same methodological rigor that is used in traditional drug trials. The above referenced studies included fully described randomization, blinding of both study participants and outcome assessors, and meticulously constructed placebos that are indistinguishable from the active treatment, which also is the advantage of the current trial over previous studies. The majority of published trials on echinacea have reported a positive treatment effect. The more rigorous the study design, however, the smaller the observed effect, which led the latest Cochrane collaboration review on the topic to conclude there is not enough evidence to support recommending echinacea for relief of cold symptoms [4].

Several limitations to this study make it difficult to conclude that there is no possible future role for echinacea in the treatment of the common cold. The formulation of echinacea used in this study was different than those previously studied, and it is possible that other extracts are more effective. Second, previous studies have shown echinacea may be effective only if given early in the course of the viral infection, and the longer pretreatment period average in this study may have masked a benefit. Finally, the study was powered to detect a reduction of 2 days of cold symptoms; smaller improvements also may be clinically significant and desirable. Importantly, no major adverse consequences were reported with the use of echinacea, and minor adverse events were not significantly more frequent than with placebo.

**Applications for Clinical Care**

Although safe, the use of echinacea is unlikely to be beneficial in a young, healthy patient with symptoms of the common cold.

*—Review by Josh F. Peterson, MD, MPH*

**References**

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to house dust mite: double blind randomised controlled clinical trial. *BMJ* 2002;324:520-4.

2. Irnich D, Behrens N, Molzen H, et al. Randomised trial of acupuncture compared with conventional massage and “sham” laser acupuncture for treatment of chronic neck pain. *BMJ* 2001;322:1574-8.

3. Drew S, Davies E. Effectiveness of *Ginkgo biloba* in treating tinnitus: double blind, placebo controlled trial. *BMJ* 2001; 322:73-8.

4. Melchart D, Linde K, Fischer P, Kaesmayr J. Echinacea for preventing and treating the common cold. *Cochrane Database Syst Rev* 2000;(2):CD000530.

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