Albendazole for the treatment of human echinococcosis: a review of comparative clinical trials

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CRD summary
The review evaluated the effectiveness and safety of albendazole for cystic echinococcosis. The authors concluded that evidence supported the use of albendazole in patients with CE but further research is required. The limited search, lack of reporting of review methods and lack of assessment of study quality made it difficult to comment on the reliability of the authors’ conclusions.

Authors’ objectives
To evaluate the effectiveness and safety of albendazole for patients with cystic echinococcosis (CE).

Searching
PubMed and ISI Web of Science databases were searched using reported key words. No language restrictions were applied. In addition, reference lists of relevant articles were screened. Search dates were not reported.

Study selection
Comparative clinical trials (including randomised controlled trials (RCTs) and nonrandomised trials (CCTs)) that evaluated the effectiveness and safety of albendazole for patients with CE were eligible for inclusion.

Comparative clinical trials evaluated the following treatments: albendazole versus placebo; albendazole versus mebendazole; albendazole plus praziquantel versus albendazole alone; albendazole plus surgery versus surgery alone; albendazole versus albendazole plus puncture, aspiration, injection and re-aspiration (PAIR) versus PAIR alone; and albendazole plus PAIR versus surgery. The review assessed treatment success, improvement and failure; cyst-related complications; recurrences/relapses; albendazole-related toxicity; and toxicity leading to treatment discontinuation. Included studies assessed treatment success using different methods. Participants had cysts in various organs; some studies only included patients with liver or liver and abdominal cysts. Where reported, duration of follow-up post treatment ranged from one month to 12 years.

The authors did not state how 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 data were extracted for the review, or how many reviewers performed the data extraction. Where possible, for each trial, the number of patients or cysts (and percentages) with outcomes of interest were reported. Data presented included the number of intention-to-treat (ITT) patients or cysts and the number of evaluable patients or cysts.

Methods of synthesis
The studies were grouped by treatments compared and combined in a narrative synthesis.

Results of the review
Thirteen studies were included. Some patients were included in more than one study. Six studies were RCTs. Sample sizes were reported as patients and/or cysts. Numbers of units in individual studies are reported below.

Albendazole versus placebo: One RCT reported that albendazole was associated with a significant increase in rates of improvement or cure compared to placebo. No patient discontinued treatment due to toxicity.

Albendazole versus mebendazole: One RCT and three nonrandomised studies reported that albendazole was associated
with increased treatment success rates compared to mebendazole. Some patients were included in more than one study. Three studies reported increased rates of discontinuation due to toxicity in mebendazole groups.

Albendazole plus praziquantel versus albendazole alone: Two CCTs reported that the combination of albendazole plus praziquantel was associated with increased treatment success/improvement rates compared to albendazole alone. Both CCTs reported increased rates of discontinuation due to toxicity in combination groups.

Albendazole plus surgery versus surgery alone: Two RCTs and two CCTs reported that albendazole plus surgery was associated with increased treatment success/improvement rates compared to surgery alone. One RCT reported that in albendazole groups 9% discontinued due to toxicity and 66% had raised liver enzymes; two studies reported no withdrawals due to toxicity.

Albendazole versus PAIR versus PAIR alone: One RCT reported that both PAIR and the combination of albendazole plus PAIR were associated with increased treatment success rates compared to albendazole alone. The RCT reported no withdrawals due to toxicity.

Albendazole plus PAIR versus surgery: One RCT reported similar treatment success rates for albendazole plus PAIR and surgery.

**Authors' conclusions**
Evidence supported the use of albendazole in patients with CE but there are still clinical questions to be answered and further research is required.

**CRD commentary**
The review question was clearly stated. Inclusion criteria were specified for participants, interventions and study design. Inclusion criteria for outcomes were broad. Limiting the search to two databases may have resulted in the omission of other relevant studies. Attempts were made to minimise language bias but no specific attempts to minimise publication bias were reported. Methods used to select studies and extract data were not described and so it is not known whether efforts were made to reduce reviewer errors and bias. Study validity was not formally assessed and so results from these studies and any synthesis may not be reliable. Drop-out rates appeared high for some studies but no reasons were given. In view of the diversity among studies, a narrative synthesis was appropriate. However, text had to be read with constant reference to data extraction tables and findings were not discussed with reference to any aspect of study quality. The limited search, lack of reporting of review methods and lack of assessment of study quality made it difficult to comment on the reliability of the authors' conclusions.

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

Research: The authors stated that there is a need for further research to compare the following treatments: albendazole plus PAIR versus albendazole plus surgery and assess short- and long-term outcomes; albendazole versus placebo in asymptomatic patients with milder forms of CE; albendazole plus praziquantel versus albendazole alone in terms of effectiveness and toxicity; and more studies to confirm suggestion that albendazole is superior to mebendazole.

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Record Status
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.