Does the hip powder of Rosa canina (rosehip) reduce pain in osteoarthritis patients: a meta-analysis of randomized controlled trials

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CRD summary
Rose-hip powder seemed to have a small to moderate effect on pain in osteoarthritis patients and may be of interest as a herbal remedy. Further research in a large, long-term trial was needed to substantiate these results. Given the small number of trials and participants, as well as the loss of data through only including the first phase of crossover trials, the authors' conclusion may not be reliable.

Authors' objectives
To determine the efficacy of hip powder Rosa canina (rose-hip) as a pain reducing compound for the symptomatic treatment of osteoarthritis.

Searching
MEDLINE, EMBASE, CINAHL, BIOSIS Previews, Web of Science, SciFinder, Scopus and the Cochrane Library were searched without language restriction up to October 2007. Search terms were reported. Reference lists of relevant articles and conference abstracts (over the last two years) from established international societies of rheumatology were also checked.

Study selection
Randomised controlled trials (RCTs) comparing a preparation of rose-hip powder with placebo in patients with clinical or radiographic evidence of osteoarthritis were eligible for inclusion in the review. The primary outcome of interest was reduction in pain. Secondary outcome included change in the average level of painkillers used, the number of responders to therapy and adverse events. Studies in conditions such as non-osteoarthritis joint pain, rheumatoid arthritis, pain due to surgery or injury or studies with mixed patient groups (e.g., osteoarthritis and rheumatoid arthritis) unless subgroup data for osteoarthritis were available, were excluded.

The intervention in all the trials included rose-hip powder 5g/day and mean trial duration was 3.3 months. All included participants were selected from outpatient clinics. One trial included osteoarthritis patients who had experienced pain for at least six months and who were on a waiting list for either hip or knee surgery or on a list for final evaluation for surgery. Most participants were women (62%) suffering from knee osteoarthritis (61%); other joints affected included neck and hand osteoarthritis. Participants had a median age of 65.6 years and, where reported, mean body mass index ranged from 27.0 to 27.3kg/m\(^2\). One trial was conducted in Norway and two trials were conducted in Denmark.

Two reviewers selected and reached agreement on studies for inclusion in the review.

Assessment of study quality
The quality of the studies was assessed using the Jadad scale, with the following criteria: reported randomisation, masking, and withdrawals. A maximum of five points could be awarded.

Two reviewers assessed the studies for quality.

Data extraction
The number of responders to therapy was extracted for each study. Mean differences with standard deviations were calculated for continuous outcomes and odd ratios (ORs) with 95% confidence intervals (CIs) for dichotomous outcomes.

Two reviewers independently extracted data using a customised form and any disagreements were resolved through consensus.

Methods of synthesis
Studies were combined in a meta-analysis using a mixed effects model; the restricted maximum likelihood method was applied. Only data from the first period of the cross-over trials was used in the analysis due to evidence of carry-over bias. Summary estimates were reported as effect size (ES) (continuous outcomes) and OR (dichotomous outcome) with their associated 95% CIs. Statistical heterogeneity was assessed using the Q test and the I² statistic. The number needed to treat was estimated, with 95% CIs on the basis of the combined OR value.

Results of the review
Three RCTs were included in the review (306 participants); one parallel group design and two cross-over designs. Two studies received a Jadad score of four and one study received a Jadad score of five.

Pain reduction (three RCTs): A statistically significant effect in favour of rose-hip was found (ES 0.37, 95% CI 0.13 to 0.60, p=0.0019). No evidence of statistical heterogeneity was found.

Use of rescue medication (three RCTs): A small but statistically significant difference was found in favour of rose-hip (ES 0.28, 95% CI 0.05 to 0.51, p=0.018). No evidence of statistical heterogeneity was found.

Number of patients responding to therapy (three RCTs): Patients receiving rose-hip were significantly more likely to respond to treatment than patients receiving placebo (OR 2.19, 95% CI 1.38 to 3.48, p=0.00089). No evidence of statistical heterogeneity was found. The combined osteoarthritis corresponded to a number needed to treat of six patients (95% CI 4 to 13).

Adverse events: Mild cases of gastrointestinal discomfort and acid regurgitation were reported in both study arms. In one trial, mild unwanted effects that did not cause withdrawal were reported for frequent voiding, diarrhoea, constipation and short episode of mild urticaria. No statistically significant between group differences were found.

Authors’ conclusions
Rose-hip powder seemed to have a small to moderate effect on pain in osteoarthritis patients and may be of interest as a herbal remedy. However, its efficacy and safety need further evaluation in a large, long-term trial.

CRD commentary
The review question was supported by clear inclusion criteria. Several sources were searched without language restriction and attempts were made to locate unpublished literature, which minimised the likelihood of language and publication bias. It appeared that the methods used to select studies for inclusion in the review, extract data and assess study quality were likely to have minimised the possibility of reviewer error and bias.

The quality of the included studies was assessed using a standardised tool. A summary result for each trial was reported and all trials were deemed to be of high quality. All included trials were sponsored by the manufacturer. All studies were conducted in Norway and Denmark, so generalisability of these results to other populations may not be possible. The analysis used seemed appropriate.

Given the small number of trials and participants, as well as the loss of data through only including the first phase of cross-over trials, the authors’ conclusion 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 suggested that results on the safety and efficacy of rose-hip for pain reduction in the treatment of patients with osteoarthritis needed to be substantiated in a large well-conducted RCT of at least six months duration. The authors emphasise the use of validated outcome measures and the explicit reporting of the numbers of patients responding according to the OMERACT-ORSI (Osteoarthritis Research Society Internal set of responder criteria for osteoarthritis clinical trials) response criteria.

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