Harpgophytum procumbens for osteoarthritis and low back pain: a systematic review
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CRD summary
This review evaluated the effectiveness of Harpgophytum procumbens to treat musculoskeletal pain. The authors concluded there was strong evidence for the use of aqueous Harpgophytum (50 mg harpagoside) for exacerbations of chronic non-specific low back pain. Some evidence of effectiveness was also reported for other types or sites of pain when using alternative preparations. This review was well conducted and the results are likely to be reliable.

Authors' objectives
To evaluate the effectiveness of Harpagophytum procumbens preparations to treat various forms of musculoskeletal pain.

Searching
Two reviewers searched PubMed (1966 to September 2003), EMBASE (1980 to 2003), the Cochrane Controlled Trials Register, the Cochrane Musculoskeletal Group's Specialized Register of Controlled Clinical Trials, Dissertation Abstracts, BIDS-ISI and the Cochrane CENTRAL Register for studies published in any language; the search terms were reported. The reference lists of retrieved studies and reviews were also checked. Experts and manufacturers of commercial Harpagophytum preparations were contacted for further published and unpublished material.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), quasi-randomised controlled trials and controlled clinical trials were eligible for inclusion.

Specific interventions included in the review
Studies evaluating Harpagophytum procumbens preparations were eligible for inclusion. The dose of harpagoside ranged from less than 20 mg/day to 100 mg/day.

Participants included in the review
Studies of adults suffering from musculoskeletal pain due to osteoarthritis or low back pain were eligible for inclusion. The included studies evaluated people with osteoarthritis, non-specific low back pain (NSLBP) and unstated mixed pain. The mean age of the participants, where stated, ranged from 28 to 64 years.

Outcomes assessed in the review
The primary outcome of interest was changes in pain on one of four scales. The secondary outcomes were the number of pain-free patients, functional indices, generic outcome measures, or consumption of additional analgesic treatment.

How were decisions on the relevance of primary studies made?
Two reviewers independently reviewed studies for relevance to the review, with any differences being resolved by consensus.

Assessment of study quality
The criteria used to assess study quality related to the following: eligibility criteria; the method of randomisation; allocation concealment; similarity at baseline; description of the outcome measures, control interventions, adverse events and drop-outs; the relevance of outcome measures; the use of a power calculation; the use of an intention-to-treat analysis; presentation of point estimates and variance; and the appropriateness of timings of outcomes. High-quality studies were defined as those fulfilling more than 6 (out of 13) of the criteria. The authors did not state who performed the quality assessment.
Data extraction
Two reviewers, who were not blinded to the authors, institution or journal title, independently extracted the data from the studies using a standardised form. Data were extracted on the outcome measures, as reported in the individual studies.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative, grouped by condition and type of preparation.

How were differences between studies investigated?
Sensitivity analyses were planned to determine the effect of defining high quality as 40% and 60%. Subgroup analyses to investigate the effect of pain site, type of pain (acute, sub-acute or chronic) and type of comparator were planned a priori. Clinical heterogeneity and insufficient data precluded statistical pooling; therefore differences between the studies, including methodological quality, were discussed in the text.

Results of the review
Twelve RCTs (n=1,105) were included in the review.

Out of a possible 13 points, two studies scored 6, two scored 7, two scored 8, one scored 9, one scored 11, two scored 12 and two scored 13.

Osteoarthritis (5 RCTs, n=385).
Powdered Harpagophytum crude plant material performed better than placebo in patients with a wide range of osteoarthritic sites (1 study), and diclofenac and acetaminophen-caffeine use was reduced when compared with diacerhein, although there was no difference in spontaneous pain (1 study). There were greater improvements in pain and a reduction in ibuprofen usage with ethanolic Harpagophytum compared with placebo (2 studies). An aqueous extract of Harpagophytum performed better than phenylbutazone in patients with acute exacerbations of rheumatic joint and muscle pain and gouty arthritis (1 study).

NSLBP (4 RCTs, n=505).
An aqueous extract of Harpagophytum performed better than Doloteffin (2 studies), Vioxx (1 study) and placebo (2 studies) in patients with pseudo-radiating or non-radiating NSLBP. One study reported no significant difference in patients with non-radiating NSLBP when treated with an aqueous extract of Harpagophytum, compared with conventional treatments (non-steroidal anti-inflammatory drugs, exercise, massage, nerve blocks and acupuncture).

Mixed pain conditions (3 RCTs, n=215).
Dried mother tincture (1 study), aqueous extract (1 study) and ethanolic Harpagophytum (1 study) performed better than placebo.

The types and number of adverse events reported in each study were given in the review.

Authors' conclusions
There was limited evidence for the treatment of knee and hip osteoarthritis with an ethanolic Harpagophytum extract containing less than 30 mg/day harpagoside. There was moderate evidence for treating spine, knee and hip osteoarthritis with Harpagophytum powder containing 60 mg harpagoside, and acute exacerbations of chronic low back pain with aqueous Harpagophytum extract containing 100 mg/day harpagoside. There was strong evidence for the treatment of acute exacerbations of chronic NSLBP with aqueous Harpagophytum extract containing 50 mg/day harpagoside.
CRD commentary
The authors addressed a clear research question using explicit and appropriate inclusion criteria. The search, for both published and unpublished data, was extensive and attempts were made to reduce language bias. Methods were used to minimise reviewer error and bias in the study selection and data abstraction processes. Quality was assessed using appropriate criteria and was considered in the authors' conclusion, although it was unclear whether the assessment was performed in duplicate.

Adequate details of the studies were presented and the decision to combine the results in a narrative was appropriate. As the authors discussed, this was a qualitative review so the magnitudes of effect of the interventions were not investigated and several studies had a small sample size. Overall, this was a well-conducted review and the results are likely to have been based on the best available evidence in this field.

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

Research: The authors stated that further trials with adequate sample sizes are required. In addition, further research is required to identify the active component related to therapeutic efficacy.

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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.