

Balneotherapy for osteoarthritis (Review)

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Background

Balneotherapy (or spa therapy, mineral baths) for patients with arthritis is one of the oldest forms of therapy. One of the aims of balneotherapy is to soothe the pain and as a consequence to relieve patients' suffering and make them feel well. In this update we included one extra study.

Objectives

To assess the effectiveness of balneotherapy for patients with osteoarthritis (OA).

Search strategy

We searched the following databases up to October 2006: EMBASE, PubMed, the Cochrane 'Rehabilitation and Related Therapies' Field database, PEDro, CENTRAL (Issue 3, 2006) and performed reference checking and communicated with authors to retrieve eligible studies.

Selection criteria

Randomised controlled trials (RCT) comparing balneotherapy with any intervention or no intervention. At least 90% of the patient population had to be diagnosed with OA.

Data collection and analysis

Two authors independently assessed quality and extracted data. Disagreements were solved by consensus. In the event of clinical heterogeneity or lack of data we refrained from statistical pooling.

Main results

Seven trials (498 patients) were included in this review. Two studies compared spa-treatment with no treatment. One study evaluated baths as an add-on treatment to home exercises and another compared thermal water from Cserkeszölő with tap water (placebo). Three studies evaluated sulphur or Dead Sea baths with no treatment or mineral baths with tap water baths or no treatment. Only one of the trials performed an intention-to-treat analysis and two studies provided data to perform an intention-to-treat analysis ourselves. A 'quality of life' outcome was reported by one trial. We found:

- silver level evidence concerning the beneficial effects on pain, quality of life and analgesic intake of mineral baths compared to no treatment (SMD between 1.82 and 0.34).
- a statistically significant difference in pain and function of Dead Sea + sulphur versus no treatment, only at end of treatment (WMD 5.7, 95%CI 3.3 to 8.1), but not at 3 month follow-up (WMD 2.6, 95%CI -1.1 to 6.3).
- no statistically significant differences in pain or function at one or three months of Dead Sea baths versus no treatment (WMD 0.5, 95%CI -0.6 to 1.6) or at one or three months of sulphur baths versus no treatment (WMD 0.4, 95%CI -0.9 to 1.7).

OARSI recommendations for the management of hip and knee osteoarthritis, Part I: Critical appraisal of existing treatment guidelines and systematic review of current research evidence

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Summary

Purpose: As a prelude to developing updated, evidence-based, international consensus recommendations for the management of hip and knee osteoarthritis (OA), the Osteoarthritis Research Society International (OARSI) Treatment Guidelines Committee undertook a critical appraisal of published guidelines and a systematic review (SR) of more recent evidence for relevant therapies.

Methods: Sixteen experts from four medical disciplines (primary care two, rheumatology 11, orthopaedics one and evidence-based medicine two), two continents and six countries (USA, UK, France, Netherlands, Sweden and Canada) formed the guidelines development team. Three additional experts were invited to take part in the critical appraisal of existing guidelines in languages other than English. MEDLINE, EMBASE, Science Citation Index, CINAHL, AMED, Cochrane Library, seven Guidelines Websites and Google were searched systematically to identify guidelines for the management of hip and/or knee OA. Guidelines which met the inclusion/exclusion criteria were assigned to four groups of four appraisers. The quality of the guidelines was assessed using the AGREE (Appraisal of Guidelines for Research and Evaluation) instrument and standardised percent scores (0-100%) for scope, stakeholder involvement, rigour, clarity, applicability and editorial independence, as well as overall quality, were calculated. Treatment modalities addressed and recommended by the guidelines were summarised. Agreement (%) was estimated and the best level of evidence to support each recommendation was extracted. Evidence for each treatment modality was updated from the date of the last SR in January 2002 to January 2006. The quality of evidence was evaluated using the Oxman and Guyatt, and Jadad scales for SRs and randomised controlled trials (RCTs), respectively. Where possible, effect size (ES), number needed to treat, relative risk (RR) or odds ratio and cost per quality-adjusted life year gained (QALY) were estimated.

Results: Twenty-three of 1462 guidelines or consensus statements retrieved from the literature search met the inclusion/exclusion criteria. Six were predominantly based on expert opinion, five were primarily evidence based and 12 were based on both. Overall quality scores were 28%, 41% and 51% for opinion-based, evidence-based and hybrid guidelines, respectively ($P < 0.001$). Scores for aspects of quality varied from 18% for applicability to 67% for scope. Thirteen guidelines had been developed for specific care settings including five for primary care (e.g., Prodigy Guidance), three for rheumatology (e.g., European League against Rheumatism recommendations), three for physiotherapy (e.g., Dutch clinical practice guidelines for physical therapy) and two for orthopaedics (e.g., National Institutes of Health consensus guidelines), whereas 10 did not specify the target users (e.g., Ontario guidelines for optimal therapy). Whilst 14 guidelines did not separate hip and knee, eight were specific for knee but only one for hip. Fifty-one different treatment modalities were addressed by these guidelines, but only 20 were universally recommended. Evidence to support these modalities ranged from Ia (meta-analysis/SR of RCTs) to IV (expert opinion). The efficacy of some modalities of therapy was confirmed by the results of RCTs published between January 2002 and 2006. These included exercise (strengthening ES 0.32, 95% confidence interval (CI) 0.23, 0.42, aerobic ES 0.52, 95% CI 0.34, 0.70 and water-based ES 0.25, 95% CI 0.02, 0.47) and nonsteroidal anti-inflammatory drugs (NSAIDs) (ES 0.32, 95% CI 0.24, 0.39). Examples of other treatment modalities where recent trials failed to confirm efficacy included ultrasound (ES 0.06, 95% CI -0.39, 0.52), massage (ES 0.10, 95% CI -0.23, 0.43) and heat/ice therapy (ES 0.69, 95% CI -0.07, 1.45). The updated evidence on adverse effects also varied from treatment to treatment. For example, while the evidence for gastrointestinal (GI) toxicity of non-selective NSAIDs (RR 1/4 5.36, 95% CI 1.79, 16.10) and for increased risk of myocardial infarction associated with rofecoxib (RR 1/4 2.24, 95% CI 1.24, 4.02) were reinforced, evidence for other potential drug related adverse events such as GI toxicity with acetaminophen or myocardial infarction with celecoxib remained inconclusive.

Conclusion: Twenty-three guidelines have been developed for the treatment of hip and/or knee OA, based on opinion alone, research evidence or both. Twenty of 51 modalities of therapy are universally recommended by these guidelines. Although this suggests that a core set of recommendations for treatment exists, critical appraisal shows that the overall quality of existing guidelines is sub-optimal, and consensus recommendations are not always supported by the best available evidence. Guidelines of optimal quality are most likely to be achieved by combining research evidence with expert consensus and by paying due attention to issues such as editorial independence, stakeholder involvement and applicability. This review of existing guidelines provides support for the development of new guidelines cognisant of the limitations in existing guidelines. Recommendations should be revised regularly following SR of new research evidence as this becomes available.