
Components of effective randomized controlled trials of hydrotherapy programs for fibromyalgia syndrome: a systematic review

Perraton L, Machotka Z, Kumar S

CRD summary

This review concluded that exercise appeared to be the most important component of an effective hydrotherapy programme for fibromyalgia syndrome, particularly when considering mental health components. Only trials that reported positive results were included, patient details were not reported and many results were not based on between-group comparisons, so the authors' conclusions should be treated with caution

Authors' objectives

To summarise the components of hydrotherapy programmes for fibromyalgia syndrome.

Searching

AMED, MEDLINE, CINAHL, EMBASE, PubMed, SPORTDiscus, Scopus, PEDro and Cochrane Central Register of Controlled Trials (CENTRAL) were searched in May 2009; search terms were reported. Only articles published in English in peer-reviewed journals from 1998 onwards were included.

Study selection

Randomised controlled trials that compared any form of active exercise within a warm water environment (hydrotherapy) with any control group in patients of any age and gender with fibromyalgia were eligible for inclusion if they reported on pain/tenderness, quality of life or functional outcome measures. Fibromyalgia had to be diagnosed by American College of Rheumatology criteria. Only trials that reported significant outcomes were included in the review.

All trials included a warm up, cool down or relaxation period in their hydrotherapy programme, all included some form of aerobic exercise and all used a group hydrotherapy program. Half of the trials used an education or land-based exercise cointervention. Control groups were no treatment, home or land-based exercise and exercises in the sea or a pool. Sessions lasted for between 30 and 60 minutes, one to four times a week for between four and 32 weeks.

Studies were selected by two reviewers.

Assessment of study quality

Study validity was assessed using the PEDro scale of: randomisation; allocation concealment; baseline similarity of groups; blinding of participants, therapists and outcome assessors; whether the drop-out rate was less than 15%; use of intention-to-treat analysis; between-group statistical comparisons; and whether point and variance estimates were reported. Maximum possible score was 10.

Assessment was carried out by two reviewers independently; disagreements were resolved by discussion.

Data extraction

Data were split into four components: exercise (type, duration and frequency); environmental (equipment used and location of hydrotherapy); service delivery (delivery, nature of supervision and any cointerventions); and outcome measures (grouped as pain or tenderness, quality of life and function). Results were reported as statistically significant or not.

The authors did not report how many reviewers performed data extraction.

Methods of synthesis

Results were presented narratively grouped by component (exercise, environmental, service delivery and outcomes).

Results of the review

Ten trials were included (sample sizes not reported). Overall trial quality was reported to be good (PEDro score ranged from 5 to 8). Only one trial had a dropout rate greater than 15%. No trials reported using an intention-to-treat analysis.

All trials reported statistically significant results in favour of hydrotherapy. Nine trials reported statistically significant between-group benefits for the hydrotherapy group at the end of treatment for pain and function. Ten trials reported similar benefits for each of quality of life and function. Two trials reported benefits for pain/tenderness and function. Three trials reported benefits for quality of life and function.

Ten trials reported statistically significant benefits for mental health outcomes (depression or anxiety). Six trials reported significant between-group differences at the end of the intervention. Two trials reported significant between-group differences at both end of intervention and follow-up.

Authors' conclusions

Exercise appeared to be the most important component of an effective hydrotherapy programme for fibromyalgia syndrome, particularly when considering mental health components.

CRD commentary

This review specified the inclusion criteria following PICO criteria. The aim was to assess components of effective hydrotherapy programmes and only trials that reported statistically significant results were included; the aim was not to look at the effectiveness of the programmes. A range of databases was searched. The restriction to studies published in English may have led to relevant studies being missed. Study quality was assessed and full results were reported. Study quality and selection were performed in duplicate to reduce reviewer error and bias; it was not reported whether data were extracted in the same way.

Patient details and numbers were not reported and most of the findings were based on pre-post outcome changes rather than between-group differences, so the authors' conclusions should be treated with caution.

Implications of the review for practice and research

Practice: The authors stated that clinicians could use the review findings to develop their own hydrotherapy programmes for fibromyalgia syndrome. The exercise component should include aerobic activity, warm-up, cool-down or relaxation periods as well as a flexibility or strength-based component, at least three times a week for at least four weeks.

Research: The authors stated that further research was needed to determine the most appropriate duration of hydrotherapy programs for fibromyalgia syndromes and whether improvements were maintained when programmes were continued independently. More research to compare passive water-based therapies to hydrotherapy would be of value from an economic perspective.

Funding

Not stated.

Bibliographic details

Perraton L, Machotka Z, Kumar S. Components of effective randomized controlled trials of hydrotherapy programs for fibromyalgia syndrome: a systematic review. *Journal of Pain Research* 2009; 2: 165-173

Original Paper URL

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3004626/?report=abstract>

Additional Data URL

<http://ukpmc.ac.uk/abstract/MED/21197303>

Indexing Status

Subject indexing assigned by CRD

MeSH

Fibromyalgia; Humans; Hydrotherapy

AccessionNumber

12010002304

Date bibliographic record published

21/07/2010

Date abstract record published

09/02/2011

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.