Pelvic floor muscle training for urgency urinary incontinence in women: a systematic review

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CRD summary
The authors concluded that there was limited evidence which supported different physiotherapy techniques for the treatment of urge urinary incontinence. There was potential for bias in the review, but the authors’ conclusions reflect the limitations of the evidence and seem to be suitably cautious.

Authors’ objectives
To assess the effectiveness of physiotherapy techniques to treat urge urinary incontinence in women.

Searching
MEDLINE, EMBASE, and PEDro were searched for articles in English, from 1996 to August 2010; search terms were reported. Reference lists were manually searched.

Study selection
Eligible for inclusion were clinical trials or randomised controlled trials (RCTs) of pelvic floor muscle training, by exercises with or without biofeedback, vaginal electrical stimulation, vaginal cones or weights, or vaginal magnetic stimulation. Trials had to be of healthy women. The primary outcome was the reduction in urge urinary incontinence. Secondary outcomes were urinary frequency, including night-time urination (nocturia), urgency, and adverse events. Trials of patients with stress urinary incontinence, and those that did not report the results for patients with urge urinary incontinence separately, were excluded. Trials of other muscle training, in addition to pelvic floor muscle training, were excluded.

The included trials compared different physiotherapy techniques to each other, sham, placebo, or other controls (such as behavioural training). Some trials assessed physiotherapy for women with urge urinary incontinence, compared with women with mixed urinary incontinence. The outcomes were measured in various ways, including bladder diaries (one, three, or seven days), pad tests (one or 24 hours), and validated questionnaires. Withdrawal rates were reported.

The authors did not state how many reviewers screened studies for inclusion.

Assessment of study quality
Two reviewers independently assessed trial quality, using the 11-item PEDro scale, with criteria for allocation concealment, blinding, outcome reporting, and intention-to-treat analysis; maximum score 10 (one item did not contribute to the score). The potential for selective reporting within trials was assessed. Disagreements were referred to a third reviewer and resolved by consensus.

Data extraction
The authors did not state how many reviewers extracted the outcome data. Where reported, the mean and standard deviation were extracted for before and after the intervention. Otherwise, the levels of significance (probabilities) were extracted.

Methods of synthesis
Due to heterogeneity across trials, the data were presented in a narrative synthesis and in tables. The potential for publication bias was assessed.

Results of the review
Thirteen RCTs were included in the review. The authors stated that publication bias was unlikely, but selective reporting was likely. Ten trials scored between 4 and 7 on the PEDro scale, indicating moderate quality. The mean withdrawal rates ranged from 1.2% to 16.8%.

Exercises: All four RCTs (283 participants) reported significant improvements in urge urinary incontinence from before to after the intervention. There were no significant improvements with pelvic floor muscle exercise, compared
with inactive controls (one RCT) or other physiotherapy techniques (three RCTs). The effects for night time urination were conflicting (two RCTs).

**Exercise with biofeedback:** All three RCTs (401 participants) reported significant reductions in urge urinary incontinence after the intervention. One also reported a significant improvement, compared with the control group, but this was not sustained at three months after treatment. No adverse events were reported.

**Vaginal electrical stimulation:** All five RCTs (318 participants) reported significant reductions in urge urinary incontinence after the intervention. Two of the three trials reported significant improvements with vaginal electrical stimulation, compared with sham treatment.

**Magnetic therapy:** All three RCTs (110 participants) reported significant reductions in urge urinary incontinence after the intervention. Two of them showed significant improvements with magnetic therapy, compared with control. The results for frequency and night time incontinence were conflicting (two RCTs). Two trials reported that there were no adverse events.

**Vaginal cones:** One RCT (88 participants) found no significant improvements for any outcomes.

**Authors’ conclusions**
There was limited evidence which supported different physiotherapy techniques for the treatment of urge urinary incontinence.

**CRD commentary**
The review question was clear, as were the inclusion criteria for study design, intervention, participants and outcomes, but not for the comparator groups. The literature search was restricted by language and no search for unpublished data was reported, which means that potentially relevant data may have been missed. The authors stated that publication bias was unlikely as published trials with negative results were included in the review, but bias was not formally assessed and cannot be ruled out.

Trial quality was assessed, using appropriate criteria. Quality assessment was undertaken by two people, but it was unclear whether this was true for the other review processes, leaving the potential for reviewer error and bias. Few participant and intervention details were reported. Given the heterogeneity across trials, a narrative synthesis was appropriate. The authors acknowledged that the evidence was limited, variable, and only of fair quality, limiting the conclusions that could be drawn.

There was some potential for bias in the review, but the authors’ conclusions reflect the limitations of the evidence and seem to be suitably cautious.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that randomised trials, with well-defined populations of women with urge urinary incontinence and long-term follow-up, were needed. Research should compare the effectiveness of current and new physiotherapy techniques, and assess subjective and objective measures of cure or improvement in urinary incontinence, the duration of benefit, the quality of life, any adverse events, and their cost-effectiveness or resource use.

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**Bibliographic details**

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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.