Management of urinary incontinence in women: scientific review
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CRD summary
This review assessed treatments for urinary incontinence in women. The authors concluded that there are several effective non-pharmacological, pharmacological and surgical treatments for urinary incontinence. There was insufficient information on the individual studies to adequately assess the evidence. Hence the authors’ conclusions may not be reliable.

Authors’ objectives
To assess treatments for urinary incontinence in women that have been reported in recent studies.

The review also assessed the aetiology of urinary incontinence, but this abstract only refers to treatment.

Searching
MEDLINE, EMBASE, the Cochrane Library and ACP Journal Club were searched from 1998 to 2003 for studies reported in English; the search terms were reported to be available from the authors. The reference lists of retrieved studies were checked and an expert in the field was contacted for details of additional studies.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) and systematic reviews of RCTs were eligible for inclusion.

Specific interventions included in the review
Studies of treatments for urinary incontinence were eligible for inclusion. Studies of oestrogen or hormone replacement therapy were excluded. The included studies used:

- non-pharmacological treatments, i.e. pelvic floor muscle training, electrical stimulation, vaginal cones, bladder training and prompted voiding;
- pharmacological treatments, i.e. anticholinergic drugs, adrenergic drugs, calcium-channel blockers, magnesium hydroxide, tricyclic antidepressants, and serotonin and norepinephrine agonists; and
- surgical interventions, i.e. open retropubic colposuspension, bladder neck needle suspension, anterior vaginal repair, laparoscopic colposuspension, suburethral sling procedures and periurethral injections.

The treatments were compared with placebo, sham treatment, or each other.

Participants included in the review
Studies of adults with urinary incontinence were eligible if the majority of the participants were women. The reviewers accepted the original authors’ definition of urinary incontinence. The primary studies included people with stress or urge incontinence.

Outcomes assessed in the review
The review focused on clinical rather than urodynamic outcomes. The outcomes assessed included self-reported cure or improvement, episodes of urinary leakage, difficulty using devices, complications and adverse effects.

How were decisions on the relevance of primary studies made?
The two authors reached consensus on study selection.
Assessment of study quality
Studies were assessed for blinding, random allocation and concealment, description of withdrawals, reporting of clinically relevant outcomes, and the use of intention-to-treat analysis. The two authors independently assessed validity.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Data presented for individual studies included the relative risk (RR), odds ratio (OR), weighted mean difference (WMD), number-needed-to-treat (NNT) and number-needed-to-harm (NNH). It was not reported whether the authors extracted or calculated these data.

Methods of synthesis
How were the studies combined?
The studies were grouped by intervention and combined in a narrative.

How were differences between studies investigated?
Differences between the studies were not discussed.

Results of the review
Sixty-six studies were included. The number of participants was unclear.

Non-pharmacological treatments.
There was evidence of effectiveness for:

pelvic floor muscle training compared with placebo (1 systematic review), RR of self-reported cure or improvement 1.53 (95% confidence interval, CI: 1.26, 1.87);

clinic-based pelvic floor exercise programme compared with a self-help booklet (1 RCT);

pelvic floor training plus bladder training versus either alone (1 systematic review plus 1 RCT);

nurse-administered home-based pelvic floor training plus biofeedback plus bladder training programme versus social visits from nurses (1 RCT); and

phenylpropanolamine versus pelvic floor training (1 RCT).

Electrical stimulation: there was evidence of effectiveness for electrical stimulation versus sham (1 RCT, n=68; NNT 5, 95% CI: 3, 42).

Vaginal cones: one systematic review found that vaginal cones increased the proportion who were subjectively cured in comparison with control interventions not involving pelvic floor muscles (RR 0.74, 95% CI: 0.59, 0.93), but found no difference between the treatments in objective outcomes.

Bladder training: there was evidence of effectiveness for bladder training versus no training (2 small RCTs); the OR for failure was 0.07 (95% CI: 0.03, 0.19).

Prompted voiding: there was some evidence of effectiveness for prompted voiding versus control (1 systematic review); the OR for no improvement in wet episodes was 0.59 (95% CI: 0.31, 1.14; WMD for episodes of incontinence in 24 hours -0.93, 95% CI: -1.32, -0.53).

Pharmacological treatments.
Anticholinergic drugs: there was evidence of effectiveness for anticholinergic drugs versus placebo for urge incontinence (1 systematic review); the OR for cure was 1.14 (95% CI: 1.29, 1.54). However, anticholinergic drugs increased dry mouth (tolterodine RR 3.02, 95% CI: 2.45, 3.71).

Adrenergic drugs: there was evidence of marginal effectiveness for adrenergic drugs versus placebo (1 systematic review); the RR for cure or improvement ranged from 1.55 to 1.96 across 3 specific drugs. However, adrenergic drugs non-statistically significantly increased adverse effects.

Surgical interventions.

Open retropubic colposuspension: there was evidence of effectiveness for open retropubic colposuspension versus bladder neck needle suspension, anterior vaginal repair and laparoscopic colposuspension. One systematic review showed lower failure rates than all three alternatives and fewer peri-operative complications than bladder neck needle suspension and anterior vaginal repair. However, open retropubic colposuspension increased new or recurrent prolapse compared with anterior vaginal repair.

Periurethral injections: there were no significant differences in cure or improvement between periurethral injection of autologous fat versus placebo (1 RCT, n=68; RR 0.98, 95% CI: 0.75, 1.29), but fat injection increased complications (NNH 5, 95% CI: 3, 11).

Bladder neck needle suspension: there was a lack of evidence.

Anterior repair: there was a lack of studies other than comparisons with open retropubic colposuspension and bladder needle suspension.

Laparoscopic colposuspension: no study was identified.

Suburethral sling procedures: there was a lack of studies other than comparisons with open retropubic colposuspension.

Other results were also reported.

Authors' conclusions
There were several effective non-pharmacological, pharmacological and surgical treatments for urinary incontinence.

CRD commentary
The review question was clear in terms of the study design and participants, and the inclusion criteria were broadly defined in terms of the intervention and outcomes. Several relevant sources were searched and some attempts were made to minimise publication bias. By limiting the included studies to those in English, the authors might have missed some relevant studies. Two reviewers independently selected the studies and assessed validity, thus reducing the potential for bias and errors. The methods used to extract the data were not described, so it is not known whether any efforts were made to reduce errors and bias. Validity was assessed using established criteria, but the results of this assessment were not reported. Not all of studies were discussed.

There was insufficient information on the individual studies and reviews to adequately assess the level of evidence. The results from reviews were reported without any assessment of the completeness of the search, or information on the quality of the included studies or the number of RCTs and participants on which the results were based, and with no report of statistical heterogeneity. Given the weaknesses of this review, it was difficult to assess the robustness of the authors' evidence.

Implications of the review for practice and research
The authors did not state any implications for practice or further research.
Bibliographic details

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Other publications of related interest
This additional published commentary may also be of interest. Harper DM. Review: several non-pharmacological, pharmacological, and surgical treatments may be effective in urinary continence. Evid Based Med 2004;9:173.

Indexing Status
Subject indexing assigned by NLM

MeSH
Adrenergic alpha-Agonists /therapeutic use; Cholinergic Antagonists /therapeutic use; Combined Modality Therapy; Electric Stimulation Therapy; Female; Humans; Physical Therapy Modalities; Risk Factors; Urinary Bladder /surgery; Urinary Incontinence /etiology /therapy; Vagina /surgery

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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.