

CONSERVATIVE INTERVENTIONS FOR URINARY INCONTINENCE IN WOMEN: A COCHRANE OVERVIEW OF SYSTEMATIC REVIEWS

Hypothesis / aims of study

At least one in four women will experience urinary incontinence (UI), negatively impacting on their quality of life (QoL) (1). Multiple overlapping reviews about conservative management have been published and it is challenging for clinicians and policy makers to keep up to date with the evidence. Cochrane Overviews aim to provide a succinct overview of reviews relevant to a specific clinical question. We completed an Overview to bring together Cochrane systematic reviews of evidence relating to conservative interventions for the treatment of female urinary incontinence.

Study design, materials and methods

A stakeholder group (n=14) including clinicians, service users, and commissioners contributed to the Overview protocol development. The group met on two occasions and, using consensus methodologies, helped us outline the scope of the review by defining the population and conservative interventions, and by identifying key areas of clinical priority. Our overview analysis and selection criteria were specified in advance and documented in a protocol (2). We comprehensively searched the Cochrane Database of Systematic Reviews (from inception to September 2016) for systematic reviews of trials involving women with UI which investigated the effectiveness of conservative management. Our primary outcomes of interest were cure or improvement (CorI) as reported by the women and condition-specific QoL questionnaires. Secondary outcomes included adverse effects, general quality of life, and pelvic floor muscle strength. Two independent reviewers applied selection criteria and assessed the methodological quality of the reviews using the Risk of Bias in Systematic reviews (ROBIS) tool. We documented the quality of evidence synthesised within the reviews using a modified GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach. Data relating to the effects of conservative management on female stress, urgency or mixed urinary incontinence (SUI, UUI, MUI), and comparisons of conservative management versus control, versus other conservative management, or versus non-conservative management, were extracted and summarised within tables. The data extracted included the number of trials, number of participants, participant characteristics, intervention, comparison, outcomes (primary and secondary), timing of outcomes, our GRADE decisions, evidence of effect and notes on direction of effect. Meta-analysis on the trial data was undertaken producing network maps illustrating intervention comparisons for which research evidence exists. Treatment effect size was summarised within forest plots. Interventions supported by high or moderate GRADE evidence were highlighted.

Results

A total of 1896 titles were screened, 186 full texts were considered, and 27 reviews and 8 protocols were included. Thirteen reviews focussed on conservative interventions, including a total of 200 trials (mean per review 15.4, SD 13.3) and 20411 participants (mean per review 1570, SD 1580). Ten reviews focussed on non-conservative interventions but included comparisons with conservative interventions, including a total of 167 trials (mean per review 16.7, SD 9.88) and 35060 participants (mean per review 3506, SD 5827). Four reviews focussed on a specific aetiology or condition, with results described narratively. Of the reviews that were included, there is a tendency for high risk of bias around the synthesis and findings (ROBIS Domain 4).

The 23 reviews included 460 meta-analyses (Table 1). 124/460 (27%) were meta-analyses for CorI, 50/460 (11%) for QoL and 286/460 (62%) were for other secondary outcomes. From our modified GRADE approach we judged the quality of evidence to be high in 33/460; moderate in 215/460; low in 179/460 and the rest very low or inestimable.

Within our primary outcome of CorI (Table 2) there is high level evidence that pelvic floor muscle training (PFMT) is more beneficial than control for all types of UI, and also has high level of evidence for QoL for SUI and MUI. There is also high/moderate level of evidence for CorI that PFMT is more effective when more intense, combined with biofeedback/feedback or behavioural change techniques. Electrical stimulation is of benefit (CoI) when compared to control for women with MUI or UUI. Only 13 women from 4 trials reported minor side effects due to conservative intervention. 380/460 outcomes were reported at immediate follow-up, 51 at 3-6 months, and 29 later or unclear. Socio-economic analysis was reported in 4 trials.

Table 1: Percentage of meta-analyses with high/moderate quality GRADE evidence, by UI type, outcome, and comparison

Cons = Conservative CorI = cure or improvement QoL = Quality of life UI = Urinary Incontinence	Stress UI 75/134 (56%)			Urgency UI 113/172 (66%)			Mixed UI 60/154 (39%)		
	CorI	QoL	2° OC	CorI	QoL	2° OC	CorI	QoL	2° OC
Cons. vs control	3 (75%)	5 (50%)	9 (60%)	6 (86%)	1 (100%)	15 (65%)	7 (78%)	1 (100%)	17 (52%)
Cons. vs Cons.	25 (64%)	6 (60%)	10 (34%)	7 (70%)	3 (75%)	20 (67%)	5 (23%)	3 (20%)	16 (29%)
Cons. vs non cons.	5 (63%)	3 (75%)	9 (60%)	10 (43%)	3 (100%)	48 (68%)	1 (33%)	1 (50%)	9 (64%)
All	33 (65%)	14 (58%)	28 (47%)	23 (58%)	7 (88%)	83 (67%)	13 (38%)	5 (28%)	42 (41%)

Table 2: Summary of GRADE quality, where evidence of benefit exists, by UI type, primary outcome and comparison

	Stress UI		Urgency UI		Mixed UI	
	C or I	QoL	C or I	QoL	C or I	QoL
Bladder training compared to control						
Weight Loss compared to control in the short term						
PFMT Individual compared to control/PFMT+ behavioural						
PFMT + ES compared to PFMT alone						
PFMT Classes						
PFMT compared to More Intense PFMT						
PFMT compared to Indirect with more contact						
PFMT alone compared to PFMT with Feedback						
PFMT + Biofeedback Versus PFMT						
Cones compared to control						
Electrical Stimulation compared to placebo						
Behavioural/adherence strategies +PFMT compared to PFMT						
Intra vaginal mechanical device compared to control						
Intra urethral injection compared to PFMT						
Acupuncture compared to drugs/lasoacupuncture						
Medication compared to PFMT/ES/control (+side effects)						

Key: black=high, grey=moderate, spotted=low quality; blank no data

Interpretation of results

The majority of SUI and UUI meta-analyses produced moderate or high GRADE quality evidence. There is a large and growing body of systematic review evidence relating to conservative management of UI. There is good quality evidence that PFMT with or without adjuncts is effective in most types of UI. There is a lack of evidence on many educational/lifestyle interventions. There is a need for improvements in the quality of future reviews (in terms of meta-analysis) and primary studies (in terms of presenting adequate data and using consistent outcome measures).

Concluding message

This overview has brought together all Cochrane systematic review evidence for the conservative management of women with urinary incontinence and provides a summary of existing evidence to support clinical decision making and improve patient care. *Implications for clinical practice:* Pelvic floor muscle training is of benefit in all types of UI. Electrical Stimulation is of benefit for MUI and UUI. Evidence is currently insufficient to give certainty over the relative effectiveness of other conservative interventions. *Implications for research:* Future research for conservative management should use standardised outcome measures, detailed descriptions of the intervention and control arms, adequately powered with long-term follow-up and socio-economic analysis.

References

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2. McClurg D, Pollock A, Campbell P, Hazelton C, Elders A, Hagen S, Hill DC. Conservative interventions for urinary incontinence in women: Overview of Cochrane systematic reviews. *Cochrane Database of Systematic Reviews* 2016, Issue 9. Art. No.: CD012337. DOI: 10.1002/14651858.CD012337

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