Combined conservative interventions for urge, stress or mixed incontinence in adults (Protocol)

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[Intervention Protocol]

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ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

To determine whether combinations of conservative interventions for urge, stress, or mixed urinary incontinence reduce the number of people with urinary incontinence compared against no treatment/usual care, or another intervention. The secondary objectives are to determine the effect of combined conservative interventions on subjective perceptions of cure or improvement; the severity of incontinence or urinary symptoms; quality of life or symptom distress; satisfaction with treatment; cost; or adverse events.

The specific comparisons to be made include:

- combined conservative intervention versus no active treatment (e.g. no treatment, wait list control, attention control or usual care);
- combined conservative intervention versus another single active treatment (e.g. a single conservative intervention, or an active non-conservative intervention);
- one combined conservative intervention versus another combined active conservative treatment.

BACKGROUND

Current guidelines recommend conservative management (defined as interventions that do not involve treatment with drugs or surgery) targeted to the type of incontinence as a first line therapy in urinary incontinence for both men and women, but they also suggest that combining interventions may be useful (NCC for Women & Children's Health 2006; SchrÅžder 2010). There are now a number of trials that have tested combined interventions for more than one type of incontinence, on the premise that combining techniques may be more effective than single techniques.

Systematic reviews already exist for individual core conservative interventions such as bladder training (BT) (Wallace 2006); timed voiding (TV) (Ostaszkiewicz 2004b); prompted voiding (PV) (Eustice 2000); habit retraining (HT) (Ostaszkiewicz 2004a); and pelvic floor muscle training (PFMT) (Dumoulin 2010). There are also existing reviews of mixed interventions for urinary incontinence (e.g. bladder training plus exercise) (Berghmans 2000; Teunissen 2004). Combined interventions are not covered by the current International Continence Society guidelines on adult conservative management (Hay-Smith 2009). There are two reviews that have included pooled results for combined conservative interventions (NCC for Women & Children's Health 2006; Shamliyan 2007), but these reviews are specific to women, and also include studies relating to the prevention of incontinence.

Description of the condition

Urinary incontinence is defined by the International Continence Society (ICS 2002; ICS 2006) as the complaint of involuntary loss of urine. The main types of urinary incontinence can be further defined as:

- urgency urinary incontinence (UUI): involuntary leakage accompanied or immediately preceded by urgency;
- stress urinary incontinence (SUI): involuntary leakage on effort or exertion, or on sneezing or coughing; and
- mixed urinary incontinence (MUI): involuntary leakage associated with urgency, and also with effort, exertion, sneezing or coughing.

Urinary incontinence is a common condition, with around 10% of the female population and 5% of the male population experiencing urine leakage at least once weekly (Anger 2006a; Anger 2006b; Tennstedt 2008). Around 15% of women experience moderate to severe urinary incontinence (Nygaard 2008). Of men reporting any incontinence, 42% reported daily incontinence (Anger 2006a).

The prevalence of different types of urinary incontinence differs between men and women. In one study using a national survey, approximately 50% of women reported pure stress urinary incontinence, 16% reported pure urgency urinary incontinence, and 34% reported mixed incontinence (Dooley 2008). In a study of men, 45% reported urgency urinary incontinence, 24% reported stress urinary incontinence, 19% reported mixed urinary incontinence, and 12% reported other types of urinary incontinence (Diokno 2007). The proportion of people with urinary incontinence increases with age in both sexes (Andersson 2004) as do symptoms of overactive bladder with urgency urinary incontinence (Temml 2005). Urinary incontinence has significant impact on quality of life (Vandoninck 2004), health behaviour (Monz 2005), and cost (Shaw 2002; Subak 2006a).

Description of the intervention

Conservative interventions targeted specifically at managing urinary incontinence aim to improve bladder control by improving muscle control (e.g. pelvic floor muscle training); or by altering the behaviour of the recipient so that they can use alternative strategies to manage urinary voiding activity (e.g. scheduled voiding regimens, bladder training or urge suppression techniques (urgency strategies), urethral occlusion techniques (e.g. stress strategies such as contracting the pelvic floor before activity i.e. 'the Knack'), or urethral emptying techniques. Some lifestyle management techniques may also focus on behavioural management of voiding activity e.g. adapting activity patterns.

Different techniques target specific types of incontinence, or factors contributing to urinary incontinence. For example, pelvic floor muscle training and 'the Knack' are commonly used for stress urinary incontinence (SUI), while bladder scheduling regimens and urge strategies are used for urgency urinary incontinence (UUI). Prompted voiding may be used because of lack of physical or cognitive ability to manage voiding activity independently.

Combined conservative interventions are usually a combination of the core strategies of bladder training and/or urge suppression strategies, together with pelvic floor muscle training and/or other stress strategies. Each of the core intervention components in this review should be targeted at urinary voiding activity specifically, and not general health such as physical fitness, mobility, or weight. Additional behavioural strategies may target adherence or performance behaviour (e.g. practice prompts, coaching), but these would not be considered to be core intervention components as they are not specific to managing voiding activity. For example, pelvic floor muscle training plus practice prompts would not be considered a combined intervention.

How the intervention might work

It is likely that different causative mechanisms contribute to urinary incontinence, especially if it is an established long term problem. Even if a predominant type of incontinence can be defined based on physical signs and symptoms, it is likely that, over time, other factors will contribute and influence voiding activity and patterns. In addition, people will develop behavioural management strategies that may be socially advantageous (but counterproduc-

tive in terms of continence treatment) such as frequent voiding to avoid leaks, using protective pads or garments, or limiting fluid intake.

Combined conservative interventions are likely to work by adding additional or alternative techniques to the person's repertoire of management strategies. It is likely that combined interventions will work best for people with mixed urinary incontinence, but people with established continence problems of any type may benefit from learning better management strategies for voiding activity. For example, pelvic floor muscle training may enable people to better manage urinary urgency, or a focus on scheduling regimens may avoid stress problems associated with a full bladder.

Why it is important to do this review

Increasing a person's repertoire of management strategies for urinary incontinence may only add a small degree of improvement compared to that which can be gained from single behavioural interventions in some people. It is not likely to result in major gains in rates of cure, but may maximise the benefit to be gained for small additional cost. However, given the prevalence of urinary incontinence, and the devastating effects that incontinence can have on people's lives, small improvements are worthwhile if they maximise benefit.

OBJECTIVES

To determine whether combinations of conservative interventions for urge, stress, or mixed urinary incontinence reduce the number of people with urinary incontinence compared against no treatment/usual care, or another intervention. The secondary objectives are to determine the effect of combined conservative interventions on subjective perceptions of cure or improvement; the severity of incontinence or urinary symptoms; quality of life or symptom distress; satisfaction with treatment; cost; or adverse events.

The specific comparisons to be made include:

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- one combined conservative intervention versus another combined active conservative treatment.

METHODS

Criteria for considering studies for this review

Types of studies

Randomised or quasi-randomised controlled trials.

Types of participants

Adults (as defined by trialists) diagnosed either by symptom, sign, or urodynamic study as having any type of urinary incontinence, excluding people with short term incontinence for physiological reasons e.g. within one year of urological surgery or childbirth. Urinary incontinence will be as defined by the study authors.

People with cognitive impairment will be excluded if they are unable to undertake an active role in the intervention e.g. initiating requests for toileting.

Types of interventions

Combined conservative interventions includes two (or more) of:

a) A treatment to improve pelvic floor muscle function (e.g. strength, endurance, coordination etc);

b) A treatment to alter urinary voiding activity (e.g. BT, urge suppression, urethral occlusion)

c) A treatment to assist urethral emptying.

Components of the intervention may be sequenced, and uptake of multiple components of an intervention may be dependent on suitability to the individual, or on their progress. Trials where only defined subgroups of people (e.g. people with mixed incontinence) are allocated to a combined intervention will be included if outcome data are available for the subgroup.

Types of outcome measures

Primary outcomes

The number of people who report continuing urinary incontinence.

Secondary outcomes

Secondary outcomes will include:

A Participant observations

- Degree of improvement or lack of improvement in urinary incontinence;
- Other urinary symptoms;
- Severity of incontinence;
- Satisfaction with treatment.

B Quantification of symptoms

- Pad test (weights);
- Number of pad changes;
- Number of incontinence episodes (bladder diary).

C Clinician's observations

- Urodynamics;
- Observation of incontinence.

D Quality of life

- Impact of incontinence;
- Symptom distress.

E Socioeconomic measures

- Costs for the client or service.

F Adverse events

G Other outcomes

Non-prespecified outcomes judged important when performing the review.
Short term (up to 12 months post treatment) and longer term (after 12 months post-treatment) follow up measures will be collated for primary and secondary outcomes. If data from multiple short term follow up time-points are available from a single study, the time-point nearest to six months post treatment will be used.

Search methods for identification of studies

We will not impose any language or other limitations on any of the searches described below.

Electronic searches

The main source of trials will be the Specialised Register maintained by the Cochrane Incontinence Review Group details of which are described under the Incontinence Group's details in *The Cochrane Library (*please see the 'Specialized Register' section of the Group's module in The Cochrane Library). The register contains trials identified from MEDLINE, CINAHL, the Cochrane Central Register of Controlled Trials (CENTRAL) and handsearching of journals and conference proceedings. Given the behavioural focus of this review, which may not be well indexed or covered in medical databases, additional database searches will be undertaken as follows:

- databases of published studies: EMBASE (1980 to present), CINAHL (1982 to present), PsycINFO (1966 to present), and AMED (1985 to present);
- databases of unpublished and ongoing trials and theses: metaRegister of Controlled Trials, ClinicalTrials.gov, CRISP, CentreWatch, NIDRR, NIHR/Refer, WHO International Clinical Trials Registry.

The incontinence component of the additional search will be based on the search developed by the Cochrane Incontinence Review Group. The behavioural interventions component of the search will be adapted from the Cochrane Effective Professional and Organisational Care Review Group, and on the searches in previous reviews on behaviour change. The search will be designed for MEDLINE and adapted for other databases.

Searching other resources

We will utilise other sources: citation searching; contact with authors of reviews of behavioural interventions, and trialists of included studies.

Data collection and analysis

Selection of studies

Two reviewer authors will independently screen all titles and abstracts. We will retrieve the full text of titles identified by either reviewer. Two reviewer authors will also filter all full-text papers for inclusion. Disagreements will be discussed and if necessary referred to the Review Management Group in the first instance and to the Cochrane Incontinence Group Editorial Team if unresolved.

Data extraction and management

Two reviewer authors will independently undertake critical appraisal and outcome data extraction independently.
Data relevant to the pre-stated outcome measures, characteristics of the study, interventions and participants will be extracted. Where data may have been collected but not reported, further clarification will be sought from the trialists. Outcomes will be presented for unfavourable events where possible and appropriate e.g. number of people not cured. However, some therapeutic outcomes are more usually expressed and understood as favourable events (e.g. improvement in quality of life) and will therefore be reported as such. Trial data will be grouped for analysis according to the comparison e.g. comparison with active treatment, or no active treatment.

Assessment of risk of bias in included studies

Assessment of methodological quality will be undertaken using the Cochrane Collaboration Risk of Bias Tables to include assessment of: adequate sequence generation; allocation concealment;

blinding of outcome assessors; incomplete data addressed; freedom from selective outcome reporting; and freedom from other bias. Studies will not necessarily be excluded from analysis on the basis of methodological quality, but will be categorised as at low/unclear or high risk of bias as a basis for sensitivity analysis. However, if risk of bias is of concern, studies with high risk of bias may be excluded from the overall estimate of treatment effect reported.

Measures of treatment effect

We will use risk ratios (RR) for binary data (e.g. number of participants with incontinence); mean difference (MD) for continuous data (e.g. number of incontinence episodes) where the measure of the outcome is sufficiently consistent across trials; and the standardised mean difference otherwise. Generic inverse variance will be used for outcomes assessed using a mixture of quantitative and categorical outcomes.

Unit of analysis issues

If the trial contains two active treatment comparisons e.g. combined intervention arm (BT+PFMT) versus both a BT arm and a PFMT arm, we will choose one comparison arm to include, to avoid double counting the intervention arm in the same comparison or sub-category. The comparison least favourable to the combined intervention on the primary outcome will be selected for inclusion. A sensitivity analysis replacing the chosen comparator with the alternative will also be undertaken and presented, where the pooled estimate might be sensitive to the choice of comparator.

Dealing with missing data

For trials with missing data, primary analysis will be based on observed data (i.e. available case analysis), without imputation.

Assessment of heterogeneity

We will use the criteria as recommended for fixed effects analysis in the Review Group's Methodological Guidelines, namely heterogeneity (i.e. variation) of treatment effects will be identified as a concern if:

a) we judge on clinical grounds that trials should not be combined; or

b) I^2 exceeds 30%; or

c) there is a low p-value (<0.1); or

d) we judge visually that there is inconsistency between trials in the direction or magnitude of effects.

Assessment of reporting biases

If there are ten or more studies in the analysis, a funnel plot will be produced, using methods recommended by the Incontinence Review Group.

Data synthesis

Where appropriate, data will be quantitatively combined using meta-analysis to determine the typical effect of the intervention. We will use relative risk to summarise dichotomous outcomes, weighted mean difference to summarise trials that have used the same quantitative measure e.g. grams of urine, number of incontinent episodes, standardised mean difference for quantitative outcomes using different measurement units e.g. quality of life, and generic inverse variance for outcomes measured using both dichotomous or continuous measurement units e.g. subjective measures of improvement. We will apply an ITT principle as far as practicable (i.e. including all participants in the groups to which they were randomised, and not excluding any randomised participants). Trial data will be processed as described in the Cochrane Collaboration Handbook (Higgins 2009) using the Cochrane Collaboration statistical package RevMan 5. For individual clinical indicators, a fixed effects analysis will be applied as standard and pooled estimates of treatment effects with 95% confidence intervals will be presented; if heterogeneity is deemed a concern and a random effects analysis performed, we shall additionally present the tau-squared ($\hat{E}Ł^2$) statistic and an estimated range of underlying intervention effects (95% prediction interval).

Subgroup analysis and investigation of heterogeneity

Where possible, subgroup analysis will be undertaken for each of the following:

- participant clinical factors (type of incontinence: SUI, UUI, MUI);
- intervention factors (type of combined intervention e.g. PFMT + BT, PFMT + other, BT + other);
- type of comparison group (e.g. attention control versus no active treatment).

If heterogeneity is judged to be a concern, we will explore the potential methodological and clinical reasons for this, primarily by performing sensitivity analyses and subgroup analyses. If it is still deemed appropriate to obtain an overall estimate of treatment effect, a random effects analysis may be used or results will be presented only for subgroups. If meta-analysis is not possible or judged inappropriate (e.g. there is too much overall heterogeneity, even within subgroups or on excluding studies within a sensitivity analysis or there are insufficient methodologically homogeneous studies to combine sensibly using a random effects analysis), narrative synthesis of treatment effects will be undertaken.

Sensitivity analysis

Appropriate sensitivity analyses will be performed to check the robustness of conclusions to any assumptions made in the inclusion of studies or their analysis. This may include assessment based on study quality e.g. by excluding trials with high risk of bias or by excluding trials with high or unclear risk of bias.

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* *Indicates the major publication for the study*

HISTORY

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CONTRIBUTIONS OF AUTHORS

All review authors have contributed to the writing of the Protocol.

DECLARATIONS OF INTEREST

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