

Bladder training plus pelvic muscle exercises reduced urinary incontinence in women immediately after treatment

Wyman JF, Fantl JA, McClish DK, et al and the Continence Program for Women Research Group. *Comparative efficacy of behavioral interventions in the management of female urinary incontinence*. *Am J Obstet Gynecol* 1998 Oct;179:999-1007.

Question

What is the comparative effectiveness of different behavioural interventions in reducing urinary incontinence in women?

Design

Randomised trial with 3 months follow up.

Setting

Gynaecological practices at 2 academic health science centres in southeastern USA.

Patients

204 women ≥ 45 years of age (mean age 61 y, 92% white) who were living in the community, ambulatory, mentally competent, and able to toilet independently; had urine loss \geq once/week; and had urodynamic evidence of genuine stress incontinence, detrusor instability, or both. Exclusion criteria were reversible causes of urinary incontinence, uncontrolled metabolic conditions, residual urine volume after voiding > 100 ml, urinary tract infection, genitourinary fistula or indwelling catheter, or inability to contract a pelvic muscle. Follow up was 95%.

Intervention

Women were allocated to either bladder training (n = 68), pelvic muscle exercises with biofeedback assisted instruction (n = 69), or combined bladder training plus pelvic muscle exercises (n = 67) for 12 weeks. All patients were educated by nurses who used positive reinforcement.

Main outcome measures

Frequency of self reported incontinence, quality of life, perceived symptom improvement, and patient satisfaction.

Main results

71% of women had genuine stress incontinence alone, 14% had

detrusor instability alone, and 15% had both genuine stress incontinence and detrusor instability. Immediately after treatment, women who received combination therapy had fewer incontinent episodes (mean 6.8/wks) than those who received bladder training (mean 10.6/wks) or pelvic muscle exercises (mean 9.6/wks) ($p < 0.01$). Compared with pelvic muscle exercises, combination therapy increased the number of patients cured of incontinence and the number with perceived symptom improvement ($p \leq 0.05$) (table); and among women with detrusor instability, lowered the impact of incontinence on life ($p = 0.009$) and reduced symptom distress ($p = 0.038$). No differences existed between groups at 3 months after treatment.

Conclusions

Immediately after treatment, women with urinary incontinence who received bladder training plus pelvic muscle exercises had fewer incontinent episodes, better quality of life, and increased perception of symptom improvement. 3 months after treatment, all interventions showed similar effects.

*Combination therapy v pelvic muscle exercises immediately after treatment for urinary incontinence in women**

Outcomes	Combination therapy	Pelvic muscle exercises	RBI (95% CI)	NNT (CI)
Cure of incontinence	31%	13%	149% (21 to 424)	5 (3 to 23)
Perceived improvement	52%	30%	74% (13 to 174)	4 (3 to 20)

*Abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article. Results for the group that received bladder training alone were not significant and have not been included in the table.

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Commentary

Few studies have evaluated the effectiveness of bladder training or pelvic muscle exercises with biofeedback, or both, for urinary incontinence. Those that have were of short term duration.¹ This study by Wyman *et al* is valuable because it compared the treatments across urodynamic diagnoses. The important finding was that immediately after treatment, women who received combination therapy had a greater improvement in symptoms, irrespective of urodynamic diagnosis.

Mechanisms of bladder training and pelvic muscle exercises are not fully understood. These treatments have not

been examined in large, long term, randomised controlled trials. This study would have benefited from the inclusion of a non-treatment control group, an independent examiner blinded to the treatment to assess the outcomes, and pad test results and post-treatment urodynamic studies to validate the findings.

Although no differences existed between the groups after 3 months, there was a positive trend towards reduced episodes of incontinence, and greater perceived improvement and patient satisfaction in the combination therapy group. There was also a much higher median

improvement rate for this group, which needs further explanation.

This study supports the findings of other research that behavioural interventions do help patients to achieve positive outcomes. It did not show that specific combination therapy is the most effective over 3 months. More long term studies are required in this area.

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1 Ramsay IN, Ali HM, Hunter M, et al. *Int Urogynecol J Pelvic Floor Dysfunct* 1996;7:260-3.