

CONSERVATIVE MANAGEMENT OF STRESS URINARY INCONTINENCE: A SINGLE-BLIND, RANDOMIZED CONTROLLED TRIAL OF PELVIC FLOOR REHABILITATION WITH OR WITHOUT ABDOMINAL MUSCLE REHABILITATION COMPARED TO THE ABSENCE OF TREATMENT.

Aims of Study

Systematic review of randomized control trials suggests pelvic floor rehabilitation is an effective treatment for stress urinary incontinence (SUI) in women (1). However, recent data show that specific abdominal exercises may potentially be used to enhance pelvic floor rehabilitation (2). In addition, preliminary evidence reveals that specific abdominal exercises can effectively activate pelvic floor muscles in healthy subjects (2). In this context, it seems relevant to conduct a randomized controlled trial in order to study the efficacy of a pelvic floor rehabilitation program with or without abdominal muscle training. The trial was designed to compare these two conservative treatments with a no-treatment condition in SUI women.

Methods

Sixty-two women (22-44 years: mean 35 years) with symptoms of stress urinary incontinence, including >1 urinary incontinence episode a week, were recruited from a gynecology clinic. Conventional urodynamic studies and a pad test assessment were conducted to confirm the subjects' eligibility. Women were excluded if they showed involuntary detrusor contractions during filling cystometry, experienced perineal pain, vaginismus or excessive vaginal scarring that interfered with evaluation and treatment, had undergone previous uro-gynecology surgeries, presented important organ prolapse (>2 degrees Pop-Q) and had any uncontrolled medical problems that could interfere with treatment and evaluation (e.g. cardiovascular disease, neurological or psychiatric disease, cancer, or urinary or vaginal infection). Women were stratified for parity and severity of incontinence according to the pad test, then randomized to pelvic floor rehabilitation (n =20), pelvic floor rehabilitation with abdominal muscle training (n =23) and absence of treatment (n =19). Both treatment groups had a pelvic floor or pelvic floor/abdominal exercise program to do at home, once a day, five days a week, in addition to a physiotherapy session once a week over a period of eight weeks. Each physiotherapy session for the pelvic floor rehabilitation group consisted of a 15-min period of electrical stimulation followed by a 25-min pelvic floor exercise program (3). In addition, the abdominal muscle group had a 10-min session of deep abdominal muscle exercises. The third group had shoulder and back massage sessions of comparable duration (1 session/week x 8 weeks). The women in this third group were further randomized to one of the other groups as soon as their participation in the control group ended. A blinded outcome assessor took pre- and post-treatment measurements. Primary outcome measures consisted of a 20-min pad test with standardized bladder volumes. Secondary outcome measures included a global assessment of patient satisfaction using a visual analog scale (VAS), the Urogenital Distress Inventory (UDI) questionnaire and the Incontinence Impact Questionnaire (IIQ).

Results

The characteristics of the three groups in terms of age, parity and BMI were comparable at baseline. Furthermore, the outcome measures at baseline were not significantly different between the three groups. Pad test scores as well as VAS, UDI and IIQ scores improved significantly (all $p < 0.02$) in both treatment groups but not in the control group. Statistical analyses to detect significant differences in difference scores (pre-post scores) across groups was performed using the Kruskal-Wallis test. The Mann-Whitney test was then used to detect differences between paired groups. There were statistically significant differences between the three groups for all outcome measures (all $p < 0.03$). In addition, there were statistically significant differences for all outcome measures in two paired groups; control vs pelvic floor exercise (all $p < 0.03$) and control vs pelvic floor abdominal/exercise (all $p < 0.02$). However, no statistically significant differences between the treatment groups were detected for pad test scores (Mann-Whitney $U = 217$; $p = 0.751$), VAS ($p = 0.75$), UDI ($p = 0.81$) and IIQ ($p = 0.35$).

Even after randomly reassigning the control group patients to one or the other of the experimental groups and thereby increasing the number of subjects in both groups (n =28, n =29), no statistically significant differences between the two treatment groups were detected in pad test scores (Mann-Whitney U= 343,5; p=0.318), VAS (p=0.62), UDI (p=0.61) and IIQ (p=0.41).

Conclusions

The results clearly indicate that conservative physiotherapy treatments are more effective than the absence of treatment in women with stress urinary incontinence. However, the addition of abdominal training did not further improve outcome of pelvic floor rehabilitation.

References

1. Hay-Smith EJC et al. In: The Cochrane Library, Issue 4, 2002.
2. Sapsford RR et al. Co-activation of the abdominal and pelvic floor muscles during voluntary exercises. *Neurourol Urodyn* 2001;20 (1): 31-42.
3. Pelvic floor rehabilitation part II: Pelvic floor reeducation with interferential currents and exercise in the treatment of genuine stress incontinence in post-partum women; a cohort study. *Physical Therapy*, 1995;dec.: 43-49.