

HOME ELECTRICAL STIMULATION IN ADDITION TO CONVENTIONAL PELVIC FLOOR EXERCISES: A USEFUL ADJUNCT OR EXPENSIVE DISTRACTION?

Aims of Study

Pelvic floor physiotherapy remains the cornerstone of the conservative management of stress incontinence. Electrical stimulation of the pelvic floor muscles has been proposed as a useful adjunct to conventional pelvic floor exercises. Clinic based electrical stimulation may be useful for women unable to produce a voluntary contraction. However, clinic based treatment requires that women attend on a regular basis and utilises both clinic resources and therapist time. It has been suggested that home-based electrical stimulation would prove a more cost effective option. Our study set out to investigate how effective this might be in clinical practice.

Methods

Women diagnosed as having urodynamically proven GSI were recruited to the study over a three year period. Having given informed consent they were randomised to one of four treatment groups; 1) Closely supervised conventional pelvic floor exercises, 2) the same exercise programme with the use of a portable stimulator, 3) the exercise programme and use of an identical but electrically disabled dummy stimulator. Treatment was carried out over a fourteen-week period closely supervised by an experienced research physiotherapist. The fourth group acted as a control group, having no treatment for a fourteen-week period before entering the active stimulation group. Prior to undergoing treatment women underwent objective assessment with a standardised pad test and completed a standardised symptom and quality of life questionnaire. The assessment was repeated after treatment had been completed.

Results

170 women were recruited to the study. 20 were randomised to have treatment deferred and then went on to receive active stimulation. There were no statistical differences between the groups in terms of age, severity of GSI on urodynamics, QoL or symptom scores. 44 women withdrew during the study. Again, there were no statistical differences between women withdrawing and completing the study or between withdrawals across the treatment groups.

Treatment Group	Pre treatment pad test (mean, g)	Post treatment pad test (mean, g)	Significance (p)
A (active stimulator and PFE) n=88	9.9	4.3	0.001
B (sham stimulation and PFE) n=42	10	5	0.005
O (PFE only) n=40	11.9	4.2	0.004
Deferred treatment (control group) n=20	8	6.8	0.83

The pre and post treatment pad test results are tabulated above. As can be seen the change in mean pad test weight in all treatment groups was significant with a mean 50% improvement. The deferred group showed no statistically significant improvement. Symptom scores and QoL scores also improved significantly in all treatment groups but not in the control group. Statistical analysis to detect significant differences in pad test and symptom and QoL scores across groups was performed using the Kruskal Wallis test and then cross checked using the Mann Whitney test between paired groups. No statistically significant differences between the treatment groups was detected. Women taking part in the study were asked to complete treatment diaries in order to assess compliance with PFE's and use of the stimulators. Compliance was assessed as "excellent" if the PFE's and use of the stimulator were performed daily, "good" if more than three times a week, "poor" if less often than this and "unrecorded" if not recorded or withdrawn from the study. The results are tabulated in the following table:

Treatment Group	Pelvic floor exercise		Use of stimulator	
	Excellent or Good	Poor or unrecorded	Excellent or Good	Poor or unrecorded
A (PFE and active stimulator) n=88	65 (74%)	23 (26%)	40 (45%)	48 (55%)
B (PFE and dummy stimulator) n=42	33 (78%)	9 (22%)	19 (45%)	23 (55%)
O (PFE only) n=40	30 (75%)	10 (25%)	---	---

It can be seen that compliance with PFE's was generally good with three quarters of women in all groups performing exercises more than three times weekly. Compliance with use of the stimulators was poor with less than half of the stimulator groups using the devices regularly. Reasons given for poor compliance with the stimulators included, lack of time, lack of privacy and discomfort caused by the stimulator.

Conclusions

In a group of women with urodynamically proven GSI, Pelvic floor exercises under the supervision of an experienced physiotherapist lead to significant improvements in Pad test loss, symptom scores and QoL scores. The addition of home electrical stimulation did not improve the results of therapy. Implications for practice: Clinic based electrical stimulation, under supervision, may enhance the results of physiotherapy, however, the use of home stimulators is of little benefit and merely increases the cost and complexity of treatment.