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PHYSICAL THERAPY FOR PERSISTENT POSTPARTUM STRESS URINARY INCONTINENCE: A SEVEN YEAR FOLLOW-UP STUDY

Hypothesis / aims of study

The aim of this study was to evaluate the effect of intensive, eight-week physical therapy programs, with and without deep abdominal muscle training, on persistent postpartum SUI seven years post-treatment.

Study design, materials and methods

This was a prospective, single-blind randomized controlled trial. Fifty-seven postnatal women with clinically-demonstrated persistent SUI three months or more after delivery participated in eight weeks of either pelvic floor muscle training (PFMT) alone (28) or with deep abdominal muscle training (PFMT+Tra) (29). Both groups had a pelvic floor or pelvic floor/abdominal exercise program to follow at home, once a day, five days a week, in addition to a weekly physical therapy session for the eight-week period. Physical therapy sessions for the PFMT group consisted of a 15-minute period of electrical stimulation followed by 25 minutes of PFMT exercises. The PFMT+Tra group received an additional 10-minute session of deep abdominal muscle exercises (1). Seven year post-treatment, participants were contacted by telephone and invited to participate in a follow-up study. They were asked to do a 20-minute pad test with standardized volume and complete three incontinence-specific questionnaires: the Urogenital Distress Inventory questionnaire (UDI), the Incontinence Impact Questionnaire (IIQ) and the Visual Analog Scale (VAS) with a blinded outcome assessor. Kruskal-Wallis tests were used to compare follow-up participants to non-follow-up participants in regard to baseline characteristics. Outcome measures at the 7-year follow-up for PFMT and PFMT+Tra groups were compared using Mann-Whitney U test. Finally, both groups were combined to compare baseline, post-treatment and 7-year follow-up scores for all outcome measure. A non-parametric Friedman rank tests was used and if the test was significant, post-hoc comparisons were calculated to compare paired outcomes.

Results

Thirty-five of the initial 57 participants (61.4%) agreed to the follow-up, of which twenty-six (45.6%) took the 20-minute pad test (12 PFMT and 14 PFMT+Tra) and 35 (61.4%) completed the questionnaires (18 PFMT and 17 PFMT+Tra). Among the 22 non-follow-up participants, 10 had changed phone numbers, 11 did not want to participate and 1 had moved to another city. The baseline clinical characteristics of the follow-up participants and non-follow-up participants were not significantly different; nor did they differ between PFMT and PFMT-Tra participants enrolled in the follow-up study, except for UDI and IIQ ($p \leq 0.029$). Outcome-measure comparisons between PFMT and PFMT +Tra at seven years were thus calculated for pad test and VAS only. Pad test scores and VAS scores for the PFMT group were not statistically different than those of PFMT+ Tra group at seven years ($U=79.5$; $p=0.08$ and $U= 108$; $p= 0.14$). When combining both treatment groups, a total of 14/26 (53%) participants were still continent according to the pad test at seven years. Comparisons of the combined treatment group between baseline, post-treatment and seven years for all outcome measures are presented in Table 1.

Table 1. Comparison of the combined treatment group between baseline, post-treatment and seven-year follow-up

	Baseline Mean and SD (Min/Max)	Post-treatment Mean and SD (Min/Max)	Seven year follow-up	Friedman rank test	Post hoc comparisons
Pad test (g) (n =26)	31.46 ± 60.99 (3/309)	3.35 ±8.20 (0/41)	7.54 ± 13.99 (0/69)	32.49 *	B-PT ** B-F ** PT-F **
UDI (n =35)	11.37 ± 5.71 (0/30)	5.91 ±5.44 (0/22)	9.68 ± 7.03 (0/26)	17.96 *	B-PT ** B-F PT-F
IIQ (n =35)	22.46 ± 15.64 (0/57)	9.20 ±8.20 (0/28)	14.60 ± 13.42 (0/49)	30.24 *	B-PT ** B-F ** PT-F **
VAS (n =35)	6.80 ± 2.13 (1/10)	3.74 ± 2.78 (0/10)	4.75 ± 2.69 (0/10)	23.40 *	B-PT ** B-F ** PT-F

B = baseline; PT = post-treatment; F = 7-year follow-up; * $p \leq 0.05$; ** $p \leq 0.01$

Interpretation of results

Seven years after following an intensive eight-week physical therapy program for persistent postpartum SUI, there were no statistically significant differences in the pad test and VAS scores between PFMT group and PFMT +Tra group. When combining both treatment groups together, one woman out of two was still continent according to pad testing. Incontinence-specific signs, symptoms and quality of life remained better than before treatment although not as good as immediately after. An observed reduction of the effect of physical therapy over time, was not unexpected, especially as only 19/35 (54 %) of the participants continued to practice PFM exercises regularly. In spite of the worsening of all outcomes at the 7-year follow-up compared to immediately after treatment, pad test, IIQ and VAS outcomes were still significantly better than at baseline.

Concluding message

According to this small follow-up RCT, the addition of deep abdominal training does not appear to further improve the outcome of PFM training in the long term. However, benefits of physical therapy for persistent postpartum SUI, although not as important as immediately after the intervention, seemed to be present seven years post-treatment. Further research with larger groups, is required in order to compare the long-term impact of PFMT programs, as well as whether and how post-treatment benefits can be maintained.

References
1. Physiotherapy for persistent postnatal stress urinary incontinence: a randomized controlled trial. Obstet Gynecol. 2004 Sep;104(3):504-10

Specify source of funding or grant	**Funding from the Canadian Institute of Health Research and the Fonds de la recherche en santé du Québec**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Ethics committee of Ste-Justine's hospital where subjects were recruited originally** **Ethics committee of the Montreal Geriatric Institute where the follow-up visit were done (where we have our lab)**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**