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IMPACT OF PELVIC FLOOR MUSCLE TRAINING ON QUALITY OF LIFE IN WOMEN WITH MULTIPLE SCLEROSIS

Hypothesis / aims of study

Multiple Sclerosis (MS) is characterised by an autoimmune attack on the myelin, this results in decreased conduction through the nerve. Lower urinary tract symptoms (LUTS) occur in up to 90% of these patients and urgency, with or without urge incontinence, usually with frequency and nocturia are the most common symptoms (1). Quality of Life (QoL) questionnaires are considered to be one of the most important outcome assessments in many clinical studies. Understanding the impact of urinary disorders on the QoL in patients with MS is essential to conduct appropriate investigations and the evaluation of potential interventions. This blind, randomised and prospective trial aimed at investigating the impact of pelvic floor muscle training on QoL in women with multiple sclerosis. The results of the rehabilitation on disability will be discussed in another study.

Study design, materials and methods

Twenty seven women with MS and symptoms of urgency, with or without urge incontinence, frequency and nocturia were recruited and randomized, by the envelope method, into two groups: Treatment (G-I) (N=13) and Sham (G-II) (N=14). Evaluation consisted of the following questionnaires of Quality of life: ICIQ-SF, Qualiveen and SF-36 and all patients were assessed before and after treatment. The intervention was performed by a physiotherapist for a period of 12 weeks in both groups with participants attending twice a week. The G-I intervention consisted of Pelvic Floor Muscle Training (PFMT) in lying supine position with assistance of a Perina (Quark, São Paulo, Brazil) perineometer and was instructed to practice the exercises daily at home, without the assistance of any device, in other positions such as sitting and standing. They were also advised to integrate the exercises into their daily lives activities and the regimen was reviewed weekly according to the initial vaginal assessment using the PERFECT system. The G-II received a sham treatment which consisted of the introduction of a perineometer inside the vagina with no contraction required.

Results

Data analysis was by intention to compare the beginning and the end of each intervention and the Repeated-measures ANOVA was used. A P-value of 0.05 was considered significant. Demographic data were calculated by the Mann-Whitney test and there were no statistically significant differences between groups.

After the treatment, in the ICIQ-SF assessment, G-I showed significant improvement (p=0.002) and G-II the scores were higher from the beginning of intervention and it was also significant (p=0.0003) (Figure 1).

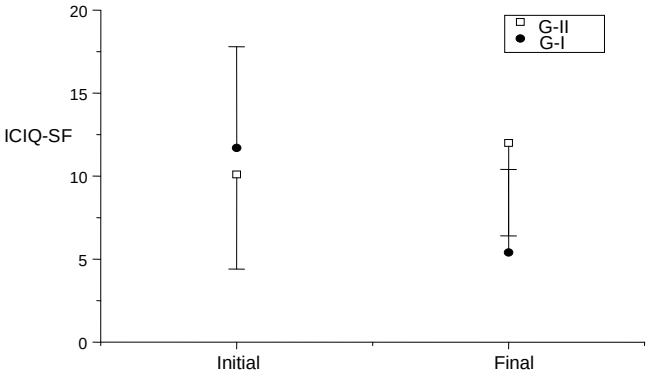


Figure 1 - Mean and standard deviation of ICIQ - SF before and after intervention in G-I and G-II.

Significant differences were found in the Bodily Pain (p = 0.0019) domain of SF 36 questionnaire in G-I. No statistically significant differences were found in Physical Functioning; Social Functioning; Mental Health; Role Limitation due to Physical Problems; Role Limitation due to Emotional Problems; Vitality; and General Health Perceptions domains of the same questionnaire (Figure 2). No differences were found in G-II.

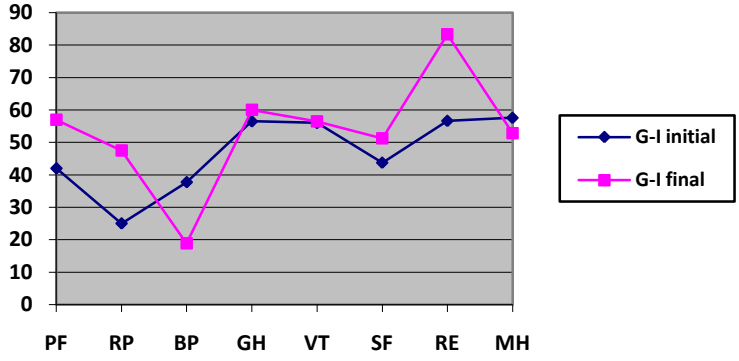
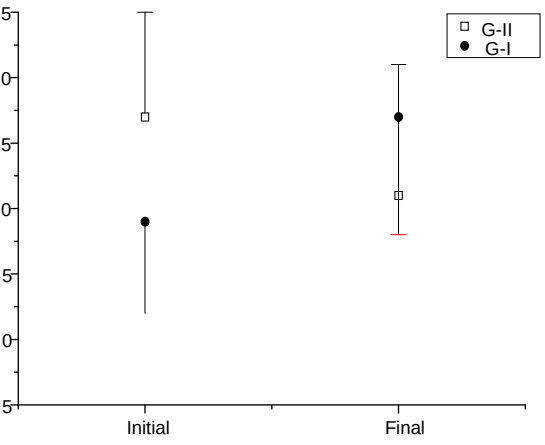


Figure 2 – Mean of initial and final values of SF-36 questionnaire in Treatment (G-I) group. PF – Physical Functioning; SF – Social Functioning; MH – Mental Health; RP – Role Limitation due to Physical Problems; RE – Role Limitation due to Emotional Problems; VT – Vitality; BP – Bodily Pain and GH – General Health Perceptions.

In Specific Impact of Urinary Problems on Quality of Life (SIUP) domain of the Qualiveen questionnaire, significant lower scores in G-I (p= 0.0010), were found (Figure 3). In General Quality of Life (GQoL) domain of the same questionnaire, a significant difference was found (p= 0.0064) in G-I (Figure 4). No differences were found in G-II.



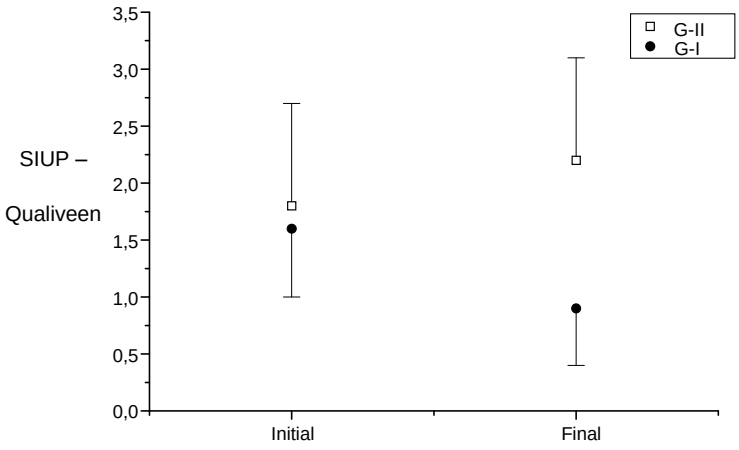


Figure 3 - Mean and standard deviation of Qualiveen – SIUP domain before and after intervention treatment (G-I) and sham (G-II) groups.

Figure 4 – Mean and standard deviation of Qualiveen-GQoL domain before and after intervention in treatment (G-I) and sham (G-II) groups.

Interpretation of results

The ICIQ-SF is a specific questionnaire for incontinence and it measures the amount, frequency and impact of urinary incontinence in patients' lives. The reduction of ICIQ-SF scores showed that when patients stop losing urine they enhance their QoL. SF-36 is a general questionnaire and does not measure specifically the impact of overactive bladder and urinary incontinence on QoL. However, we found significant improvements on scores of bodily pain domain possibly because disturbed bladder function is the most common cause of recurrent urinary tract infection and disturbed sleep in MS patients, and leads to bladder and abdominal pain with worsening spasticity. With the improvement of the disturbed bladder, pain caused by this condition diminishes (2). Qualiveen questionnaire showed that urologic rehabilitation contributes not only to a better GQoL but also diminishes the impact of symptoms on a patient's life, as can be observed in SIUP domain. SF-36 and the GQoL domain of Qualiveen are both general QoL questionnaires. Although the first one did not show any differences in most of the results, the second one revealed significant differences on QoL after PFMT, using similar questions. These differences are possibly due to the fact that SF-36 is composed of a higher number of questions enabling deeper assessment of general QoL.

Concluding message

Pelvic Floor Muscle Training is an effective treatment option to diminish the impact of lower urinary tract symptoms in QoL in women with Multiple Sclerosis.

References

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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	**Ethical Committee of Medical Sciences School, UNICAMP (N°242/2006)**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**