14 - THE DURATION OF EFFECT AND SATISFACTION RATE OF FUNCTIONAL MAGNETIC STIMULATION IN WOMEN WITH REFRACTORY NEUROPATHIC OVERACTIVE BLADDER SYNDROME

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INTRODUCTION AND AIM OF THE STUDY

In 1998, the United States Food and Drug Administration approved functional magnetic stimulation (FMS) as a conservative treatment method for overactive bladder (OAB) syndrome. Different studies and meta-analyses have suggested that FMS improves OAB symptoms in the short- and medium-term, while others could not confirm its efficacy [1-3]. The aim of our study was to focus on the effect of the FMS on OAB symptoms in women with refractory neuropathic OAB. Neuropathic OAB is usually a consequence of nerve entrapment by disc protrusion, spinal stenosis or neural foramina narrowing. In our experience, these patients often do not respond to the first- and second-line conservative therapy and are especially difficult to treat.

MATERIALS AND METHODS

This was a small prospective cohort study. Women with OAB and coexisting chronic degenerative lumbar spine disease in whom first- and second-line conservative therapy did not relieve the symptoms were included. Contraindication for participation in the study were pregnancy, active urinary tract infection (UTI), and implanted pacemaker or cardioverter defibrillator. During FMS, women were able to continue with their regular pharmacological therapy for OAB. Institutional review board ethical approval was obtained.

Before FMS, we performed a complete urogynaecological work-up in each patient. Patients evaluated the bothersomeness of their OAB symptoms on a scale from zero (not bothersome at all) to 100 (very bothersome) and filled out the following questionnaires: Incontinence Impact Questionnaire 7 (IIQ-7), Urogenital Distress Inventory 6 (UDI-6), and Patient Perception of Intensity of Urgency Scale (PPIUS). Urine analysis and urinary culture were also performed to exclude an underlying UTI.

FMS was performed using a “magnetic chair”, which stimulates both lumbar and pelvic area simultaneously. Each patient received 16 FMS courses in 2 months (2-3 courses per week). We performed a follow-up of these patients up to three months (FU-3) and twelve months (FU-12) after the treatment. At the follow-up, patients evaluated their satisfaction with FMS, the bothersomeness of their symptoms and again completed the questionnaires. Moreover, they evaluated the duration of effect of FMS on their OAB symptoms. Results were analysed using SPSS Statistics programme. Descriptive statistics were used to describe basic patients’ characteristics. Non-parametric paired samples test was used to compare results before and after FMS. Statistical significance was set at $p<0.05$.

RESULTS

Thirteen women were included in the study; one was excluded because she developed an UTI right after the beginning of the FMS. Overall, 12 patients were included in the analysis. Their average age at the beginning of FMS was 63±15 years (range 23-75 years). Ten patients (83.3%) were taking an anticholinergic or beta-agonist before and during FMS. All patients attended FU-3 and eleven patients were available for the FU-12.

When comparing results before FMS and FU-3, there was a significant improvement in daytime frequency ($p=0.007$), nocturia ($p=0.005$), bothersomeness of OAB symptoms, and UDI-6 ($p=0.004$), IIQ-7 ($p=0.004$) and PPIUS scores ($p=0.016$). At FU-12, 10 out of 11 patients (90.9%) stated that their OAB symptoms have recurred. However, the difference in patients’ outcomes between FU-3 and FU-12 was significant for daytime frequency only ($p=0.034$) (table 1). The average duration of FMS effect was 5 months (range 2-6 months).

Table I: Comparison of patients' outcomes before FMS and at the three-month and twelve-month follow-up

Parameter	Before FMS	FU-3	FU-12
Frequency [No±SD, range]	8.2±3.4 (3.5-15)	5.9±3.1 (1.5-11)	7.2±4.2 (2.5-16)
Nocturia [No±SD, range]	5.2±5.5 (2-20)	2.7±2.7 (0-9)	3±2.2 (1-8)
Bothersomeness of OAB symptoms [value±SD, range]	68.7±15.6 (44-90)	52.7±26.4 (5-80)	57.8±27.4 (8-100)
PPIUS [value±SD, range]	3.2±0.7 (2-4)	2.5±0.9 (1-3.5)	2.9±0.8 (2-4)
UDI-6 [value±SD, range]	75.4±24.7 (25-100)	34±19.5 (0-62.5)	50±19.4 (16.6-79.1)
IIQ-7 [value±SD, range]	65.5±33.5 (0-95.1)	15.9±16.9 (0-52.4)	37.6±34.9 (0-95.1)

At FU-3, only two women (16.7%) stated their condition did not improve after the stimulation; one of them was found to develop an UTI immediately after the FMS and was treated appropriately. Five (41.7%) women were extremely satisfied, one (8.3%) very satisfied, and four (33.3%) satisfied with the results of FMS. At FU-12, again only two patients (18.2%) stated their condition did not improve after FMS, two (18.2%) were extremely satisfied, one (9.1%) very satisfied, six (54.5%) satisfied, and two (18.2%) only partially satisfied with the results. All patients would recommend FMS to their friends. Out of ten symptomatic patients, nine would decide for another course of FMS treatment.

INTERPRETATION OF RESULTS

According to results of our small prospective study, FMS improves OAB symptoms in women with refractory neuropathic OAB. FMS significantly decreased daytime frequency, nocturia, bothersomeness of OAB symptoms, PPIUS, UDI-6, and IIQ-7 scores. However, the symptoms tended to recur after approximately 5 months post FMS, although there were no statistically significant differences in patients' outcomes between the three-month and the twelve-month follow-up. The therapy was well accepted by the patients, although some of them experienced some transient lower back or back thigh pain during stimulation. All patients would recommend FMS to their friends and almost all would decide for another course of FMS treatment. In the future, it would be reasonable to assess the effect of repetitive FMS on OAB symptoms in a larger number of patients and to determine whether FMS could serve as an adjunct to pharmacological therapy in patients with refractory OAB before referring them to more invasive treatments such as intra-vesical injection of botulinum toxin or sacral nerve stimulation.

CONCLUSIONS

In patients with refractory neuropathic OAB, FMS offers significant short-term improvement that lasts approximately 2-6 months.

REFERENCES (max. 3)

1 Lim R, Lee SW, Tan PY, Liong ML, Yuen KH. Efficacy of electromagnetic therapy for urinary incontinence: A systematic review. Neurourol Urodyn 2015; 34:713-22.

2 Yamanishi T, Homma Y, Nishizawa O, Yasuda K, Yokoyama O; SMN-X Study Group. Multicenter, randomized, sham-controlled study on the efficacy of magnetic stimulation for women with urgency urinary incontinence. Int J Urol 2014; 21:395-400.

3 Morris AR, O'Sullivan R, Dunkley P, Moore KH. Extracorporeal magnetic stimulation is of limited clinical benefit to women with idiopathic detrusor overactivity: a randomized sham controlled trial. Eur Urol 2007; 52:876-81.

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