

EVALUATION OF DEPRESSIVE SYMPTOMS AFTER TIBIAL POSTERIOR ELECTRICAL STIMULATION FOR OVERACTIVE BLADDER IN OLDER WOMEN: A PILOT STUDY

Hypothesis / aims of study

Overactive bladder (OAB) syndrome is urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence (UUI), in the absence of urinary tract infection [1]. And due to functional urological causes often coincide with some type of psychological or psychiatric manifestation. This may even be the case when patients without a documented psychiatric history are considered. Furthermore, also in healthy subjects emotional influences can impact voiding and often will lead to an increase in urgency and frequency. In general the association of a somatic disease with a depressive disorder is not uncommon and affects 25% of hospital inpatient populations. The concurrence and association between common psychiatric conditions (i.e., affective symptoms) and overactive bladder is extensively described in literature [2]. Transcutaneous posterior tibial nerve stimulation (TPTNS) involves stimulation of afferent fibers of the posterior tibial nerve (L4-S3) accessed just above the ankle. The key potential benefit of this approach is that it is less invasive than SNS. There is evidence of significant improvement in OAB symptoms using TPTNS which is comparable to the effect of antimuscarinics but with a better side effect profile. The purpose of the present study was thus to assess depressive symptoms after tibial posterior electrical stimulation for overactive bladder syndrome patients.

Study design, materials and methods

This is randomized, clinical trial study. Women admitted with they were between 60 and 80 years old. Elderly women with overactive bladder syndrome were randomized in two groups (CG – non-electrical stimulation group - control group - and EG-electrical stimulation group). EG elderly women with overactive bladder syndrome were prospectively treated with TPTNS weekly for a total of 8 sessions. NEG didn't receive any type of treatment. OAB symptoms were the main clinical presentation reported by all women. OAB symptoms were assessed using a 3-day voiding diary and ICIQ-OAB (International Consultation on Incontinence Questionnaire Overactive Bladder). Women who did not consent or were unable to complete the weekly treatment sessions, and women that used drugs to treat overactive bladder in the last six months, women who presented some neurological disease, with heart pacemaker, with lower urinary tract infection, were excluded. We chose to use the protocol described previously: two self adhesive electrodes, positioned with gel, one immediately behind the medial malleolus and another 10cm above. It begins with a frequency of 1Hz and seeks to correctly identify the posterior tibial nerve. This position is confirmed with the rhythmic movement of flexion of the fingers. The frequency is then changed to 10Hz, pulse width fixed at 200µs and intensity adjusted according to each patient's threshold. Depression symptoms was evaluate by Geriatric Depression Scale (GDS). The EDG with 15 items (GDS-15) is a short version the original scale from the items that most strongly. They correlated with the diagnosis of depression. This study was approved by the ethics committee of our institution, and all women signed a free and informed consent form. The sample size calculation was based on a pilot study of 30 elderly (6 women in each group), considering a significance level of 0.05 ($\alpha = 0.05$), a power of 80% ($\beta = 0.20$) and test non-directional and used the program GPower 3.1.5. For the statistical analysis, SPSS (Statistical Package for Social Sciences) version 20.0 was used. To determine normality of the data and to analyze the differences between the groups Komogorov-Smirnov and test-t Student's was used, respectively, as appropriate. A P-value of <0.05 was considered statistically significant.

Results

From november 2014 to march 2015, 81 possible eligible patients were recruited and 9 were excluded. In total, 72 women were divided between 38 EG (electrical stimulation group) women, and 34 CG (control group). Table 1 shows the distribution of patients according to demographic characteristics collected. It is noticeable that there was no difference between groups in terms of age, body mass index, number of pregnancies, vaginal births.

Table 1: Distributions of patients according to demographic characteristics

Variables	Group	Mean	p- value
Age (years)	Electrical stimulation Group	67,32 (±5,34)	0,109
	Control Group	69,79 (±7,27&	
IMC (Kg/m ²)	Electrical stimulation Group	29,66 (5,42)	0,303
	Control Group	28,48 (±4,17)	
Number of Pregnancies	Electrical stimulation Group	5,0 (±2,54)	0,695
	Control Group	5 (±3,4)	

* $\alpha = 5\%$,

*value of p obtained through the Mann-Whitney

No statistically significant differences were observed when analyzing an electrical stimulation group and control group, regarding depressive symptoms (table 2).

Table 2: Pre and Post depressive symptoms according to the groups

Variables	Electrical stimulation group	Control Group	p- value
Pre ICIQ-OAB	8,0(±3,2)	9,0 (±3,2)	0,000 *
Post ICIQ- OAB	3,(±2,3)	9,0 (±3,4)	
Pre Depressive symptoms	5,50 (±2,4)	6,21 (±3,4)	0,068
Post Depressive symptoms	5,32 (±3,1)	5,24 (±2,9)	

Interpretation of results

The studies revealed a positive association of OAB with depressive symptoms. To our knowledge, there are no studies demonstrating that electrical stimulation or another type of treatment could influence depressive symptoms. The study demonstrated that there are not difference in depressive symptoms after OAB treatment by tibial posterior nerve stimulation. Even with the improvement of symptoms of OAB. Maybe depression measured by GDS was an independent risk factor for OAB patients.

Concluding message

The study demonstrated that there are not difference in depressive symptoms after OAB treatment by tibial posterior nerve stimulation. Even with the improvement of symptoms of OAB.

References

1. Haylen BT, de Ridder D, Freeman RM, et al. An International Urogynaecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Neurourol Urodyn* 2010;29:4–20.
2. Vrijens D, Drossaerts J, Koeveringe GV, Kerrebroeck PV, Os JV, Leue C. Affective symptoms and the overactive bladder — A systematic review. *Journal of Psychosomatic Research* 78 (2015) 95–108

Disclosures

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