

## PERCUTANEOUS AND TRANSCUTANEOUS TIBIAL NERVE STIMULATION IN TREATMENT OF PATIENTS WITH OVERACTIVE BLADDER WITHOUT DETRUSOR OVERACTIVITY, REFRACTORY TO ANTIMUSCARINICS.

### Hypothesis / aims of study

Overactive bladder without detrusor overactivity (OAB without DO) is an “extraordinary” form of OAB. The exact pathogenesis of this condition is unknown. Antimuscarinics,  $\beta_3$ -adrenoagonists, intradetrusor botulinum toxin injections are standard treatment for patients with OAB without DO<sup>1</sup>. However, antimuscarinics are associated with high incidence of side effects, including dry-mouth, constipation and blurred vision<sup>2</sup>, and often are not effective enough to reduce OAB symptoms.

The aim of study was to investigate the efficacy of percutaneous tibial nerve stimulation (PTNS) and transcutaneous tibial nerve stimulation (TTNS) in patients with OAB without DO who didn't respond to antimuscarinics.

### Study design, materials and methods

35 (24 female and 11 male) patients with OAB without DO were included in our study. All of them had OAB symptoms: urgency, urge incontinence and frequency. The urodynamic study was performed to all patients - there were no signs of DO. According to their medical history, they were refractory to different antimuscarinic drugs (solifenacine, oxibutinine, trospium chloride, tolterodine) within the mean period  $26,8 \pm 8,7$  (12 – 44) weeks. All participants received a treatment course of PTNS (weekly administration during 12 weeks). The patients, who had good results ( $\geq 50\%$  improvement) after PTNS, were prescribed TTNS at home (with the same schedule).

### Results

24 (70%) from 35 patients had the improvement of results  $\geq 50\%$  after the course of PTNS (12 weeks). (Table 1).

Table 1

parameters	Urge incontinence episodes	Urgency episodes	Frequency	Quality of life (EQ-5D) score
Before treatment	$4,6 \pm 0,2$	$6,4 \pm 0,3$	$15,3 \pm 0,5$	$43,0 \pm 1,3$
In 12 weeks of PTNS (n=35)	$1,9 \pm 0,2^*$	$2,8 \pm 0,3^*$	$9,8 \pm 0,3^*$	$73,8 \pm 3,3^*$

\* - statistical significance  $\leq 0,05$

After completing the 12-week period of PTNS, 24 patients with good results were enrolled in the second stage of the study with TTNS at home. (Table 2).

Table 2

parameters	Urge incontinence episodes	Urgency episodes	Frequency	Quality of life (EQ-5D) score
Before treatment	$4,2 \pm 0,3$	$6,2 \pm 0,4$	$16,6 \pm 0,5$	$42,3 \pm 1,1$
In 12 weeks of PTNS (n=24)	$1,1 \pm 0,2^*$	$1,7 \pm 0,2^*$	$9,1 \pm 0,3^*$	$85,1 \pm 2,1^*$
In 12 weeks of TTNS (n=24)	$2,2 \pm 0,3^*$	$3,5 \pm 0,2^*$	$10,7 \pm 0,4^*$	$67,9 \pm 1,9^*$

\* - statistical significance  $\leq 0,05$

There were not any adverse events in both groups.

### Interpretation of results

Our results demonstrate statistically significant improvement of urgency, urge urinary incontinence, frequency and quality of life in patients with OAB without DO after administration of both methods (PTNS and TTNS). However better results were observed in group with PTNS, as in whole cohort of patients, as in 24 patients with more than 50%-improvement after the first stage of study.

### Concluding message

PTNS and TTNS are effective and safety methods of treatment in patients with OAB without DO, refracted to anticholinergic drugs. Regarding our results, PTNS shows better outcomes in compare with TTNS, and could be a treatment method of second-line in the management of OAB without DO. However, TTNS could be also prescribed in this kind of patients, especially as supportive treatment, because of its convenience and easy to use by patients at home, pretty good efficacy and safety.

### References

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Disclosures

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