

TRANSCUTANEOUS POSTERIOR TIBIAL NERVE STIMULATION IN OVERACTIVE BLADDER

Hypothesis / aims of study

Conservative management has been recommended as first-line treatment for OAB. Among the different physiotherapeutic resources available, electrical stimulation has been used for about 30 years with good results, mainly with intra-cavitary probes. **Objective:** to evaluate the effects of transcutaneous electrical nerve stimulation of the posterior tibial nerve in the treatment of the OAB.

Study design, materials and methods

This study was a 4-weeks randomized, placebo-controlled trial study evaluating Posterior Transcutaneous Nerve Stimulation (PTNS) for treatment of OAB.

A total of 43 women were selected and divided into two different groups: Group I (*Stimulation*) received electrical stimulation during 30 minutes, twice a week, during 4 weeks, using a Transcutaneous Electrical Nerve Stimulation current, biphasic (alternating) with a pulse duration of 200 micro-seconds, stimulation frequency of 10Hz, with VIF (variation of intensity and frequency) through one channel and two electrodes. The intensity level was kept immediately under the motor threshold. Group II (*Control*) was submitted to the same protocol, but without electrical stimulation. Eight sessions were done. Outcome measures included urodynamics exam and voiding diary before and after de treatment

Results

There was statistical difference between *Control* and *Stimulation* group at the end of the treatment regarding to daytime urinary frequency ($p=0.0001$), and noctúria ($p=0.0186$). Regarding to urgency symptom, the difference found between the groups before and after treatment was $p=0.05$, improving from 3.5 (SD 3.9) to 1.5 (SD 1.5) episodes per day. There was improvement of stress urinary incontinence episodes in the *Stimulation Group* when compared to *Control Group* ($p=0.0273$). We didn't find statistical difference of urge-incontinence symptoms between the groups, before and after the treatment. The maximal cystometric capacity increased statistically at *Stimulation Group* increasing from 322.9ml to 381.0ml in media ($p=0.0328$). We didn't find difference between *Stimulation and Control Group* regarding first desire to void. In 4 cases from *Stimulation Group* and 5 cases from the *Control Group*, involuntary detrusor contraction (IDC) disappeared. Patients who maintained IDC ($n=14$), we didn't find statistical difference regarding the intensity of the contraction or bladder volume at first contraction when compared *Control and Stimulation Group*.

Interpretation of results

Transcutaneous posterior tibial nerve stimulation proved to improve objective and subjective parameters of patients with OAB.

Concluding message

Among the different physiotherapeutic resources, Transcutaneous posterior tibial nerve stimulation must be considered in the management of OAB.

References

1. J Urology(2003) 169; 2210-5.
2. Scand J of Urol and Nephrol (2005) 39; 230-233.
3. Eur Urol (2006) 49; 360- 5.

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Is this a clinical trial?	Yes
Is this study registered in a public clinical trials registry?	Yes
Specify Name of Public Registry, Registration Number	CAAE-0014.0.146.000-05
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Committee of Ethics of the University of Campinas. Project n. 166/2005
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes