

TIBIAL NEUROMODULATION IN PATIENTS WITH NEUROGENIC DETRUSOR OVERACTIVITY AND PARKINSON'S DISEASE WHO STOPPED ANTICHOLINERGIC THERAPY DUE TO SIDE EFFECTS.

Hypothesis / aims of study Parkinson's disease is a neurodegenerative pathology affecting elderly patients. Neurogenic detrusor overactivity that presents as frequency and urgency varies between 27 and 90 percent of patients with Parkinson's disease and results in significant worsening of the quality of life. Anticholinergic therapy, the first line of treatment of neurogenic detrusor overactivity, frequently causes side effects. The aim of study is to assess the efficacy of tibial neuromodulation in patients with neurogenic overactivity and Parkinson's disease.

Study design, materials and methods Tibial neuromodulation was performed in 18 patients (8 males (mean age 66.7) and 10 females (mean age 66.0)) with neurogenic detrusor overactivity and Parkinson's disease.

Mean duration of the Parkinson's disease was 3,5 years in males (range from 1 to 6) and 3,1 years in females (range from 1 to 5). Mean Hoehn and Yahr score in males was 2,9 (range from 2 to 4) and in females – 2,1 (range from 2 to 3). These patients discontinued anticholinergic therapy due to severe side effects. The pressure/flow study didn't show infravesical obstruction in all patients. Frequency varied between 9 and 19 (mean 15,4±3,0), urgency between 1 and 7 (mean 4,1±1,8), episodes of urge incontinence between 1 and 4 (mean 2,2±0,8).

The patients received weekly percutaneous electrical stimulation via a 34 gauge needle placed near the tibial nerve 3 finger breadths above ankle. Use stimulation parameters were fixed pulse width of 200 microseconds at a frequency of 20 Hz and amplitude ranging from 0,5 to 10 milliamps.

In nonresponders to tibial neuromodulation we studied tibial somatosensory evoked potentials to detect other causes of detrusor overactivity.

Results . After 12 tibial neuromodulations sessions symptoms score decrease in 12 patients, and in 8 of them after 6 sessions. After 6 months of treatment frequency varied between 8 and 15 (mean 12,3±2,3) ($p<0,005$), urgency between 1 and 3 (mean 2,6±0,7) ($p<0,005$), episodes of urge incontinence between 0 and 2 (mean 1,2±0,6). In 5 of 6 tibial neuromodulation nonresponders cortical potential was delayed.

Futher investigation have found disc herniation at the L1-L2, L3-L4, L5-S1 level.

Interpretation of results We found statistically significant decrease in frequency and urgency after tibial neuromodulation. Cystometric capacity increased by 36%. Tibial neuromodulation had no side effects.

Concluding message Tibial neuromodulation is an effective method for the treatment of neurogenic detrusor overactivity and could be used as an alternative to anticholinergic therapy if the latter causes sever side effects. We also suggest that tibial neuromodulation could be added to pharmacological therapy to reduce doses of the drugs.

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DISCLOSURES: NONE

CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the Ethics committee of Russian State Medical University and followed the Declaration of Helsinki Informed consent was obtained from the patients.