

CLINICAL EFFECTIVENESS OF PTNS (POSTERIOR TIBIAL NERVE STIMULATION) IN THE TREATMENT OF NON NEUROGENIC DETRUSOR UNDERACTIVITY.

Hypothesis / aims of study

Detrusor underactivity is defined as a contraction of reduced strength resulting in prolonged and/or uncompleted bladder emptying. At present it can be diagnosed only on the basis of an invasive urodynamic study. Potential risk factors of bladder underactivity include: ageing, diabetes, neurogenic disease, cardiovascular disease, obstruction and psychological causes. Human detrusor biopsies reveal axonal degeneration, muscle loss, and fibrosis in DU. It has a negative impact on the quality of patients' life, especially if the incomplete bladder voiding forces the doctor to recommend the placement of a permanent catheter or a self catheterization regimen.

The aim of our study is to evaluate the effectiveness and safety of a series of posterior tibial nerve neuromodulation before the dis-obstructive surgical treatment in patients affected by detrusor non neurogenic underactivity with preserved bladder sensitivity and capacity.

Study design, materials and methods

We treated 19 male patients, average age 67 (52 – 78) years old. 9 patients had permanent catheter for a maximum of 3 months and a minimum of 3 weeks, with, at least 2 unsuccessful removal attempts. 1 patient was under self-intermittent catheterization regime. All the patients were non responders to drug therapy.

All the patients, at the urodynamic study, present a Qmax < 10ml/s and a pDet at Qmax or during urination attempt ≤ 30 cmH₂O with a median of 18 cmH₂O (range 10 - 30 cmH₂O). They filled out IPSS and Qol before and after the treatment.

All the patients underwent a series of at least 20 PTNS sessions, two or three times a week.

Urodynamic study was repeated at the end of the series, evaluating the Qmax, the pDet at Qmax or during urination attempt, Cistomanometric Capacity and Post Voiding Residual.

Results

IPSS and Qol score of patients without permanent catheter was overall better but not statistically significant. In 14 patients the urodynamic study demonstrated average maximum pDet during pressure-flow study of 36cmH₂O (range 32 - 44 cmH₂O). In 5 patients, we recorded an improvement of detrusorial pressure (however lower than 30 cmH₂O).

In all cases after the PTNS series, patients underwent a surgical dis-obstruction treatment (endoscopic or open) with good functional outcomes evaluated by IPSS, Qol and uroflowmetry with post-voiding residual. Only the 2 patients with detrusorial pressure lower than 30cmH₂O, after surgical treatment needed a training of self catheterization for pathological post-voiding residual.

Concluding message

The PTNS is a simple procedure, painless, easy for the patient to process. The use of surface electrode could be useful also for domestic treatment. It seems to be able to improve detrusor contractility, with a view to a surgical dis-obstructive treatment in patients affected by detrusor non neurogenic underactivity.

Disclosures

Funding: No **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** Because the procedure is already approved **Helsinki:** Yes **Informed Consent:** Yes