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Authors: M.R. van Balken, V. Vandoninck, E. Finazzi Agrò, F. Petta, C. Caltagirone, J.P.F.A. Heesakkers, B.L.H. Bemelmans, F.M.J. Debruyne
Institution: UMC St. Radboud; Tor Vergata University, Rome, (Italy)
Title: PERCUTANEOUS TIBIAL NERVE STIMULATION (PTNS) FOR THE TREATMENT OF BLADDER OVERACTIVITY: URODYNAMIC DATA

Aim of Study:

Percutaneous stimulation of the posterior tibial nerve has been introduced as a new therapy modality for patients with urgency, frequency and urge incontinence. Aim of this study was to evaluate urodynamic parameters in these patients.

Methods:

76 patients (56 women, 19 men, mean age 52.7 years) were enrolled in a 12 week prospective study in 5 sites in the Netherlands (n=56) and one site in Italy (n=20). Symptoms consisted of urgency/frequency (> 8 voids per 24 hour) with or without over 3 episodes of urge-incontinence per week. A needle was inserted 5 cm cephalad to the medial malleolus and connected to a stimulation device for 30 minutes at weekly sessions (pulse width 200 µsec; frequency 20 Hz; adjustable current 0-10 mA). At 0 and 12 weeks the following parameters were recorded by means of voiding charts (urinary frequency (UF), the number of leakages per 24 hour) and urodynamic investigations (volume at first sensation (FS), volume at first detrusor instability (VDI) and cystometric bladder capacity (CC)).

Subjective success was defined as a positive response on a 4 point-scale (much better, improved, unchanged, worse). From 33 patients urodynamic data at 0 and 12 weeks were available: a paired sample t-test was performed.

Results:

See table

Conclusion:

Improvement was seen in urodynamic parameters as well as in voiding chart data. Although instable detrusor contractions do not disappear, VDI and CC are significantly larger after treatment with PTNS.

All	N	0 weeks	N	12 weeks	Mean change
Success: 62.3%		Mean (± SD)		Mean (± SD)	(95% CI)
FS (ml)	62	125 (± 99)	28	157 (±77)	
VDI(ml)	41	140 (± 83)	29	212 (± 68)	
CC(ml)	68	268 (± 147)	33	304 (±117)	
UF/24h	66	14.4 (± 6)	62	11.2 (±7.1)	-3.15 (-1.9;-4.3)
Leakages/24h	62	5.8 (± 5.8)	60	2.65 (±4.9)	-3.1 (-1.8;-4.3)
Paired	N	0 weeks	N	12 weeks	Mean change
Success: 65.2%		Mean (± SD)		Mean (± SD)	(95% CI)
FS (ml)	28	129 (±88)	28	157 (±76)	+28 (-11;+68)
VDI(ml)	28	120 (±89)	29	212 (± 86)	+93 (+43;+143)
CC(ml)	33	247 (±143)	33	303 (± 117)	+56 (+0.5;+112)

* Success: percentage of patients “much better”, “improved”; SD: Standard deviation; CI: Confidence interval; FS: First sensation; VDI: Volume at first detrusor instability; CC: Cystometric Capacity; UF: urinary frequency.