519

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INTENSIVE PERCUTANEOUS TIBIAL NERVE STIMULATION IN THE TREATMENT OF URGE URINARY INCONTINENCE DOES NOT INCREASE THE SUCCESS RATE

Hypothesis / aims of study

Percutaneous Tibial Nerve Stimulation (PTNS) has been successfully introduced as a therapy for patients with non-neurogenic lower urinary tract dysfunction refractory to conservative treatment. PTNS was proven efficacious in patients with overactive bladder syndrome (OBS) and non-obstructive bladder retention. In patients with pelvic pain syndrome the success was less pronounced. Most patients are treated with 12 weekly PTNS sessions of 30 minutes. Little research has been performed to investigate different treatment schedules. This study has been performed to determine if intensive PTNS therapy of 3 sessions a week is more effective than the regular treatment schedule of 1 session per week.

Study design, materials and methods

30 patients (4 males, 26 females, mean age 51 years) with refractory incontinence due to overactive bladder syndrome (> 3 episodes of OBS incontinence per week) were treated with 30-minute PTNS treatment sessions, 3 times a week during a period of 4 weeks in an outpatient setting. PTNS was performed as described elsewhere. For stimulation a low-voltage (9V) electrical stimulator with fixed stimulation parameters (frequency: 20 Hz, pulse-width: 200 microseconds, intensity: 0-10 mA) was used. Curling of the big toe or fanning of all toes after increasing the amplitude confirmed correct placement of the needle. All patients felt a radiating sensation spreading the foot sole and toes during stimulation. Patients were evaluated by history, 24-hour bladder diary and questionnaires on quality of life (SF-36 and I-QoL) before and after PTNS. An improvement on bladder diary parameters greater than 50 percent was considered an objective successful outcome.

Results

Of the 30 treated patients 29 could be evaluated, one patient was lost in follow up and considered not successful. Patients had complaints of overactive bladder syndrome for a mean period of 10 years (range 0-28). All were treated with conservative treatments without result. 29/30 patients were unsuccessfully treated with oral medication (mean number of prescriptions: 2, range 0-8). 13/30 patients had unsuccessful surgical treatment (mean number of operations: 1, range 0-2). 14/30 patients were treated with physiotherapy, 15/30 with electric stimulation, and 11/30 with other treatments such as clear intermittent catheterisation, biofeedback or bladder training, all without success.

The results of the bladder diary and quality of life questionnaires are presented in the table below.

N= 29	Mean (SD)		
	BE	SE	P value
I-QoL	61,0 (17,4)	72,8 (21,8)	0,003
SF-36	60,9 (21)	70,0 (22,5)	0,005
Number of voids	13,0 (6,5)	11,7 (7,0)	0,070
Nocturia	2,2 (1,5)	1,4 (1,6)	0,005
Mean voided volume (cc)	128,6 (55,4)	180,3 (80,6)	0,005
Total voided volume (cc)	1598.6 (708,9)	1877,2 (813,7)	0,099
Number of incontinence episodes	8,0 (7,7)	3,9 (4,1)	0,000
Severity of incontinence	1,6 (0,6)	1,2 (0,9)	0,054
Number of used pads	3,9 (3,6)	2,6 (3,3)	0,008

Legend:
- BE: base-line evaluation before treatment. SE: second evaluation after 4 weeks of PTNS.
- Nocturia: number of times the patient has to get out of bed at night to void
- P value based on the Paired-Samples t-Test

18/30 (60%) patients were successfully treated with PTNS and had > 50% improvement on the bladder diary. 14/30 (47%) patients did subjectively improve after PTNS, and wanted to continue treatment. 3/30 patients performed clean intermittent self-catheterisation as treatment of their overactive bladder complaints and resumed normal micturition after PTNS therapy.

Interpretation of results

30-minute PTNS treatment sessions 3 times a week during a period of 4 weeks are effective, with a success rate of 62%. Patients had a significant decrease in the number of incontinence episodes, number of used pads and nocturia, while quality of life and mean voided volume increased significantly.

Concluding message

PTNS 3 times a week during a period of 4 weeks seems to be as effective as 12 weekly treatment sessions. The new treatment schedule is more demanding for the patients and caregivers at the outpatients clinic, but due to its higher intensity gives quicker results.

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