659

Finazzi Agro E[1], Parisi A I[2], Petta F[1], Sciobica F[1], Miano R[1], Germani S[1], Vespasiani G[1]
1. Dept. of Urology, Tor Vergata University, 2. IRCCS S. Lucia Hospital

POSTERIOR TIBIAL NERVE STIMULATION (PTNS): IS THE ONCE-A-WEEK PROTOCOL THE BEST OPTION?

Hypothesis / aims of study

Posterior tibial nerve stimulation (PTNS) is a technique of neuromodulation, consisting in the electric stimulation of a nerve bundle near the ankle (posterior tibial nerve), that derives from S3 nerves controlling bladder detrusor and perineal floor. This technique has the advantage, versus traditional sacral root neuromodulation, to be less invasive. While the effects of sacral root neuromodulation are soon reported by the patient, being observed even immediately after the start of the stimulation (1), the results of PTNS are obtained only after several stimulation sessions. Data from literature (2,3) show that a protocol of stimulations performed weekly can be successful in as much as about 60% of patients with overactive bladder syndrome. There are no data on results of different protocols of stimulation. It is possible to suppose that the execution of more frequent stimulation sessions could produce earlier results. Aim of our study was to compare the results of PTNS performed weekly with those of PTNS performed three times per week in patients with overactive bladder syndrome.

Study design, materials and methods

35 patients (28 females, 7 males) with overactive bladder syndrome not responding to anticholinergic therapy were enrolled in a prospective study. 17 of them (14 f; 3 m) were randomly assigned to group A and treated with a PTNS protocol based on weekly stimulation sessions. 18 of them (14 f; 4 m, group B) were randomly assigned to group B and treated with a PTNS protocol based on stimulation sessions performed three times per week (every two days). The PTNS session was performed in all cases according to the usual technique (2) for a total of 12 sessions in each group. All subjects were evaluated by means of 24h bladder diaries, quality of life questionnaires (I-QoL, SF36) and urodynamic evaluation (50 ml/min. filling cystometry followed by pressure/flow study with EMG recording of pelvic muscles floor activity) before and after treatment. Patients were asked after each stimulation session to give their opinion on the efficacy of the treatment. We have considered “success” those patients who presented a reduction >50% of the micturition episodes/24h (ME/24) or (if incontinent) of the incontinence episodes/24h (IE/24) at the end of the treatment. Results before and after treatment in both groups were collected and statistically compared.

Results

Results are reported in table.

	Median (range)						
	Before Treatment			After Treatment			
	Group A	Group B	p*	Group A	p+	Group B	p+
IE/24	3 (1-5)	3 (1-6)	ns	1 (0-3)	0.01	1 (0-3)	0.01
ME/24	12 (8-22)	11 (7-19)	ns	8 (5-15)	0.01	8 (6-18)	0.01
SF-36	57 (23-83)	56 (22-81)	ns	62 (24-81)	0.03	62 (25-80)	0.02
I-QoL	44 (22-85)	45 (23-84)	ns	77 (35-100)	0.001	78 (33-100)	0.001
Cystometric capacity (ml)	218 (125-500)	225 (115-500)	ns	310 (195-550)	0.01	321 (210-600)	0.01

* Group A vs. B Before treatment; + After vs. Before treatment

11/17 patients (63%) in group A and 12/18 patients (67%) in group B were considered “success”. 4/11 (36%) incontinent patients in group A and 5/11 (45%) incontinent patients in group B were completely cured after treatment. In both groups, patients reported subjective improvement after 6-8 stimulation sessions.

Interpretation of results

Our findings seem to show that the periodicity of stimulation does not effect the results of PTNS treatment. The results obtained with a protocol of three stimulation sessions per week are comparable to those obtained after weekly stimulations.

Concluding message

The advantage of more frequent stimulation sessions is to achieve earlier a clinical improvement (after few days instead of after several weeks). In the perspective of the development of an implantable device for chronic PTNS treatment, this protocol of stimulation could select easily and in a reasonable amount of time the candidates to surgery.

References

1) Spinal Cord. 2001 Aug;39(8):420-8.
2) Neurourol Urodyn. 2003;22(1):17-23.
3) Neurourol Urodyn. 2003;22(3):227-32.