197

Finazzi Agro E[1], Parisi A I[2], Petta F[1], D'Amico A[2], Musco S[1], Virgili G[1], Caltagirone C[3]
1. Dept. Urology, Tor Vergata University, 2. IRCCS S. Lucia, 3. Dept. Neurology, Tor Vergata University

PERCUTANEOUS TIBIAL NERVE STIMULATION IN THE TREATMENT OF LOWER URINARY TRACT DYSFUNCTION SECUNDARY TO MULTIPLE SCLEROSIS

Aims of Study

Multiple sclerosis (MS) is a neurological disease, producing focal demielinization of the central nervous system (CNS). If motor or sensory symptoms are the common initial findings leading to diagnosis, it has been reported that as much as 75% of all patients will suffer for lower urinary tract (LUT) symptoms during his/her life (1). Such symptoms are usually caused by a LUT dysfunction: the most common finding is detrusor overactivity (DO), often associated with detrusor-sphincter dyssynergia (DSD) or impaired contractility (IC). If anti-cholinergic drugs are the commonly used in subjects with DO, the presence of DSD or IC can contraindicate these drugs, at least in patients who do not accept intermittent catheterization. Thus, alternative treatments are often needed in these patients.

Percutaneous tibial nerve stimulation (PTNS) is a technique of LUT neuromodulation consisting in the electric stimulation of the posterior tibial nerve. Several studies on the effects of this treatment on overactive bladder syndrome and on non obstructive urinary retention have been published (2,3). Thus, the effects of this technique on the filling and on the voiding phase of the micturition cycle, could suggest a potential role in MS patients. Aim of our study was to investigate the role of PTNS in the treatment of LUT dysfunction secondary to MS.

Methods

12 MS patients (9 females, 3 males) with LUT symptoms have been enrolled for a prospective 12 week study. Their mean age was 45 ± 13,8 years. Mean disease duration was 12,7 ± 7 years (range 3-23). All patients were in a stable phase of the disease, with no acute episode for at least three months; none of the patient showed any patent modification of the neurological condition during the treatment. Mean EDSS was 3,5 (range 3-5,5). Three patients had incomplete bladder voiding with pathologic post-void residual urine; 3 had an overactive bladder syndrome; 6 had episodes of urge incontinence (in 3 of them associated with pathologic post-void residual urine). Three patients showed a urodynamic pattern of pure IC, while 6 presented with DO and IC and 3 with pure DO. Patients with DO had poor response to anti-cholinergic drugs and/or severe increasing of residual urine during the pharmacologic treatment. 5/9 patients were treated with anticholinergic or alfa-blocker drugs before the beginning of the protocol and four of them continued unchanged this therapy during PTNS treatment.

The treatment was constituted by weekly stimulation sessions (30 minutes length), performed for 12 weeks according to the described technique (3). Evaluation was performed at week 0 and 12 and was based on voiding diaries, quality of life questionnaires (I-QoL, SF-36) and urodynamic studies.

Results

One patient stopped the treatment for personal reasons after 6 weeks and her data had not been considered. 8/11 patients (72,7%) who completed the treatment considered it subjectively successful and asked to go on with a tapering protocol of stimulation. Objective success was considered a reduction of residual urine and/or of episodes of micturition or incontinence >50%: 7/11 patients (63,6%) were considered “success”. One patient with pure IC and one with DO and IC showed a significant reduction of residual urine (from 190 to 80 ml and from 400 to 100 ml respectively); 2 patients with DO and IC showed a significant reduction of both residual urine and episodes of incontinence/micturition; 1 patient with DO and IC and 2 with pure DO showed a reduction of episodes of incontinence/micturition. In these seven patients an increase of QoL scores (I-Qol: from a mean of 63 to a mean of 83, p=0.01; SF-36: from a mean of 60 to a mean of 66, p=0.03) was noticed. In 5/7 an amelioration in at least one urodynamic parameter could also be observed.

Conclusions

PTNS seems to be an interesting, minimally invasive option for the treatment of LUT dysfunction in MS patients. It could be of particular interest in those patients with associated DO and IC for a possible role on both micturition cycle phases. Further investigations are needed to confirm this preliminary experience.

References

1. Drugs 2003;63(2):153-66
2. J Urol. 2001 Sep;166(3):914-8
3. Neurourol Urodyn. 2003;22(1):17-23.