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PERCUTANEOUS TIBIAL NERVE STIMULATION: EFFICACY WITH PATIENTS ALSO TAKING ANTICHOLINERGICS

Hypothesis/aims of study

Patients taking anticholinergic medications can improve their continence, urgency and frequency status with the addition of Percutaneous Tibial Nerve Stimulation (PTNS) to their treatment regimen. The purpose of this retrospective chart review study is to demonstrate that when anticholinergic medications are withdrawn, improvement continues in urinary symptoms with PTNS therapy alone.

Study Design, materials and methods

A retrospective chart review was conducted at a community based continence clinic from May 2006 through December 2008. Patients included in the study were at least 18 years of age, did not have stress urinary incontinence as a primary diagnosis, experienced at least 8 voids per day and/or 2 voids per night, had no contraindications to PTNS, were taking any anticholinergic medication indicated for overactive bladder at the time that PTNS therapy was started and were not satisfied with either medication efficacy or could not tolerate the drug side effects. A 3-day voiding diary was completed at the start of PTNS treatment that represented the patient's baseline level of voiding parameter, presumably reflecting the effects of their anticholinergic drugs. Voiding diaries were also completed after treatment 6 and after treatment 12. Data was analyzed for frequency of day voids, nighttime voids, and incontinent episodes. Any serious adverse events associated with PTNS were also noted. PTNS therapy was administered by an advanced nurse practitioner. The patient was seated comfortably; a 34 gauge needle electrode was inserted into the ankle, approximately 5 cm superior to the medial malleolus and 2 cm posterior. Electrical stimulation was applied for 30 minutes, with the level based upon the patient's sensory and motor response.

Results

Forty patients met the inclusion criteria, with voiding diary data available on 39. At the conclusion of 12 weekly, 30 minute treatments, 30 patients had been able to discontinue OAB medications and showed statistically significant improvement in daytime voids, mean =2.7, (p=0.004), night voids, mean = 1.9, (p<0.0001) and incontinent episodes, mean=3.2, (p<0.0001) from baseline. (Table1). Nine patients remained on OAB medications at the end of 12 weeks of PTNS therapy. This group showed statistically significant improvement for day voids, mean=2.1, (P=0.02) and incontinence episodes, mean =4.4, (P=0.003). Night void changes were not statistically significant for patients who remained on OAB medications, mean =0.3, (p=0.58),
No serious adverse events were reported throughout the 12 weeks of PTNS therapy.

Table 1

Voiding Parameter Change from T0 to T12 by Medication Use at T12			
On Meds at T12	**Variable**	**Mean change**	**p value**
Yes	Day voids	-2.1	0.02
	Night voids	-0.3	0.58
N=9	Incontinence	-4.4	0.003
No	Day voids	-2.7	0.004
	Night voids	-1.9	<0.0001
N=30	Incontinence	-3.2	<0.0001

The p-values comparing the change between the groups are as follows: change in day voids (p=0.61), change in night voids (p=0.02), change in incontinence episodes (p=0.35). The difference between groups in the change in night voids is due to the non-significant improvement for the group of subjects that remained on medication at T12. All other parameters showed statistically significant improvements from T0 for both groups.

Interpretation of results

From a retrospective chart review of 40 patients, PTNS was found to be an effective adjunct to anticholinergic medications or replacement for medications used to treat overactive bladder symptoms. PTNS may be used to replace medication therapy in those patients who experience poor symptom relief from medications or cannot tolerate drug side effects.

Concluding message

PTNS is an effective, non-invasive option for patients with urgency, frequency and urge incontinence with demonstrated symptom relief during 12 weeks of therapy.

Specify source of funding or grant **None**

Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require eithics committee approval because	**It is a retrospective chart review.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**