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PTNS in refractory overactive bladder: is maintenance always necessary?

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Introduction

Percutaneous tibial nerve stimulation (PTNS) is an alternative therapy for refractory overactive bladder. The need for maintenance therapy to sustain positive clinical results has been proposed in some papers, but some logistical issues may arise (increased number of treatments and time-consuming)[1]. At present, there is no standardized treatment regimen[2].
We evaluated the effect of a re-treatment dose of PTNS before to install maintenance therapy in real life practice.

Methods and Materials

It is a longitudinal study of a cohort in a tertiary-level teaching hospital where adult patients underwent PTNS treatment for refractory OAB. All patients were treated with a course of 12 weekly 30-min sessions. The PTNS technique was performed using a low-voltage electrical stimulator and a 34-gauge acupuncture needle. Stimulation parameters were: pulse width 210 µsec, frequency 20 Hz, continuous and intensity just bellow sensitive threshold.

The assessments performed were: OABq-SF questionnaire, bladder diary of 3 days Spanish version (DM3D) and Treatment Benefit Scale (TBS) questionnaire, one week before the treatment and one month after PTNS treatment finished.

Patients contacted the department when they experienced recurrence of OAB symptoms, then they were offered for a re-treatment of 6 weekly 30 minutes sessions, or Botulinum toxin or Sacral neuromodulation or standard of care (SOC). If patients experienced recurrence of symptoms again, they were offered maintenance therapy (PTNS every one month), or Botulinum toxin or Sacral neuromodulation or SOC. Follow-up was done at the outpatient clinic, and the global clinical response was evaluated according to TBS.

Results

58 patients were evaluated, mean (SD) age was 56,7 (14,7) years, 47 (81%) were female, with a median follow-up of 46 months. TBS was greatly improved in four (6,9%), improved in forty-two (72,4%) and not changed in twelve patients (20,7%). No patient experienced worsening of symptoms. Variables that experienced an statistically significant improvement were dual OABq-SF score, episodes of urgency, voids in 24 hours, episodes of nocturia and episodes of incontinence (Table 1).

46 patients (79,3%) experienced improvement of symptoms after first PTNS cycle. Thirty-four patients with successful treatment experienced relapse of symptoms and received re-treatment (6 weekly 30-min sessions). The median (IQR) for the relapse of symptoms were 8,5 (8-14) months. After re-treatment, six patients didn´t need maintenance because success of re-treatment, and at long term follow up, 4 patients maintain good response. Twenty-eight patients asked for maintenance, during maintenance 4 patients lost efficacy, so there are 24 patients in maintenance with good response. Of the 46 patients with successful treatment after first PTNS cycle, 12 didn´t receive re-treatment and 7 remain asymptomatic with a median (IQR) of 44 (32,8-55,8) months.

Therefore 11 patients of 46 with improvement of symptoms after first PTNS cycle (23,9%), were asymptomatic without need for maintenance and with a median follow-up of 46 months. (Figure 1)

Discussion

This study showed a subjective success in 79,3%, and objective success according to the bladder diary, after 12-week PTNS. Patients did not experience significant side effects, similar to findings from previous studies demonstrating safety and efficacy of PTNS for the management of OAB. Panicker et al [3] showed that patients with successful PTNS that did not return to maintenance had higher perception of satisfaction than group that returned to maintenance. They suggested a mismatch between improvements in objective measures and subjective measures. The question is that the option to return to maintenance depends on subjective evaluation. We propose the idea of administering re-treatment of 30 minutes sessions over 6 weeks, when patient complaint of relapse of symptoms, before to decide maintenance, according to subjective perception on TBS. Patients that did not return to maintenance were comfortable with symptoms, with a median follow-up of 44 months. With this strategy, we have been able to avoid maintenance in 23,9% of patients.

Figure 1. Flow-chart of OAB patients starting PTNS

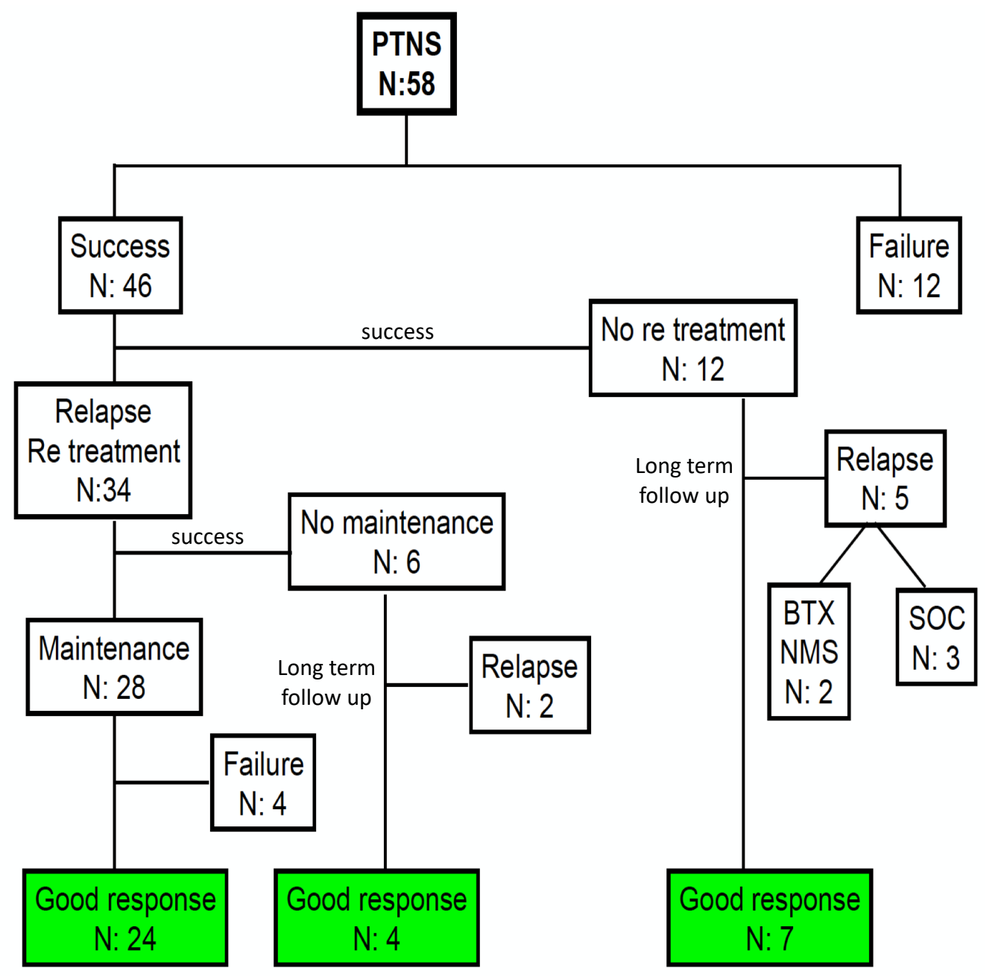

Table1. Demographic characteristics and treatment response 1 month after end of treatment

Age [mean (SD)]	56,7 (14,7)		
Gender [female (%)]	47 (81%)		
	Baseline mean (SD)	Post treatment mean (SD)	p
OABq-SF sev	54,8 (20,5)	36,7 (24,4)	0,000
OABq-SF QoL	53,5 (21,3)	66,4 (25,6)	0,000
Urgency episodes	11,2 (6)	8,3 (6,2)	0,005
Incontinence episodes	2,1 (2,9)	1,3 (2,4)	0,011
24h frequency	12,5 (5,6)	11 (4,8)	0,012
Daytime frequency	10 (4,3)	9,4 (4)	0,241
Nocturnal frequency	2,2 (1,9)	1,5 (1,5)	0,003
Max bladder capacity	319,2 (136,5)	321 (142,3)	0,808
Min bladder capacity	65,2 (47)	72,5 (45)	0,113
Mean bladder capacity	162,6 (64)	156,7 (61)	0,476

Conclusions

Some patients, up to 23,9% in our experience, may not need maintenance therapy because good response to first PTNS cycle or one re-treatment cycle.

References

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2. L. L. de Wall and J. P. F. A. Heesakkers, “Effectiveness of percutaneous tibial nerve stimulation in the treatment of overactive bladder syndrome,” *Res. Reports Urol.*, vol. 9, pp. 145–157, 2017.
3. J. N. Panicker *et al.*, “Factors influencing return for maintenance treatment with percutaneous tibial nerve stimulation for the management of the overactive bladder,” *BJU Int.*, pp. 0–3, 2018.