

THE EFFECT OF SACRAL NEUROMODULATION ON NOCTURIA IN PATIENTS PRESENTING WITH DETRUSOR OVERACTIVITY

Hypothesis / aims of study

Nocturia is defined by the International Continence Society (ICS) as the complaint of waking at night to pass urine [1]. It reflects the relationship between the amount of urine produced while asleep, and the ability of the bladder to store the urine received. Nocturia can occur as part of lower urinary tract dysfunction (LUTD), notably in overactive bladder (OAB) and chronic pelvic pain syndrome. The presence of the respective symptoms of urgency or pelvic pain in a presenting patient signify the possibility that nocturia is truly a LUTS or part of a mixed aetiology. Nocturia can be a difficult symptom to treat and therefore advances in this area are needed.

Sacral Neuromodulation (SNM) is an established treatment in patients suffering with symptoms such as; refractory detrusor overactivity (DO) and detrusor overactivity incontinence (DOI) [2]. It involves the deliverance of an electrical stimulation to the sacral nerve usually via the S3 foramen.

Nocturia is a symptom that is commonly associated with the other lower urinary tract symptoms (LUTS) of urgency, urgency incontinence and frequency and therefore this study aims to look at the treatment effect of SNM on nocturia.

Study design, materials and methods

A retrospective study of 33 patients undergoing SNM as a treatment for their refractory DO. Of these patients, 20 (17 women and 3 men) reported troublesome nocturia, identified via their completion of a three day, International Consultation on Incontinence Questionnaire (ICIQ) bladder diary and gender appropriate LUTS questionnaire.

Patients underwent the stage 1 test stimulation procedure and during the two-week trial phase they were reassessed using the same ICIQ bladder diary and LUTS questionnaire as completed previously. We were then able to compare these self-reported outcome measures to assess the impact on SMN on nocturia.

Results

Data from 3 men (15%) and 17 (85%) women were reviewed. Mean patient age was (50).

The mean nocturia episodes before the intervention were 2.2 and post-intervention were 1.05. There was an average of 58% improvement in nocturia following SNM. 75% of patients had at least a 50% improvement in nocturia episodes. There was a clinically significant reduction in the median number of nocturia episodes with SNM ($Z = -3.493, p < 0.005$). [Table 1]

	Male (N=3)	Female (N=17)	Total
Complete resolution of nocturia	1 (5%)	3 (15%)	4 (20%)
At Least 50% resolution of nocturia	1 (5%)	10 (50%)	11 (55%)
No Change	1 (5%)	4 (20%)	5 (25%)

Table 1: Effects of SNM on nocturia following SNM.

Interpretation of results

In this small scale retrospective study, we have demonstrated SNM can be an effective treatment for nocturia in patients diagnosed with refractory DO. Our data is limited by its recruitment of only stage 1 test stimulation phase patients, future research using data collected from patients with the permanent InterStim (Medtronic) implanted would serve to advance the study.

Concluding message

Given the nature of the outcome measure, all data collected was self-reported. Although difficult to find an alternative reporting method it is worth considering the potential for reporting bias and its impact on accuracy of results. A prospective randomised controlled study is needed to assess the effectiveness of SNM as a treatment option for nocturia.

References

1. Van Kerrebroeck P, Abrams P, Chaikin D, Donovan J, Fonda D, Jackson S, Jennum P, Johnson T, Lose GR, Mattiasson A et al: The standardization of terminology in nocturia: report from the standardization subcommittee of the International Continence Society. *BJU Int* 2002, 90 Suppl 3:11-15.
2. 1. NICE interventional procedure guidance IPG64, Sacral nerve stimulation for urge incontinence and urgency-frequency, NICE, Manchester, June 2004.

Disclosures

Funding: None **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** It was a retrospective study based on data already collected from an established method of treatment **Helsinki not Req'd:** Not applicable **Informed Consent:** Yes