

CLINICAL AND URODYNAMIC PREDICTORS OF SUCCESS FOR PERMANENT IMPLANTATION OF SACRAL NERVE STIMULATOR

Hypothesis / aims of study

Implantation of Sacral Nerve Stimulator (SNS) has become a part of active treatment options for refractory overactive bladder (OAB) and idiopathic urinary retention (IUR). However, little is known about the predictors of SNS outcome, including which clinical and urodynamic variables are predictive of progression from test stimulation (stage I) to permanent implantation (stage II). The aim of this study was to define clinical and urodynamic parameters predictive of successful progression from stage I to stage II.

Study design, materials and methods

After IRB approval, the medical records of all patients who underwent SNS at our institution between July 2002 and July 2005 were reviewed. Using a standardized data sheet, 50 clinical and urodynamics variables were examined. A univariate followed by multi-variable logistic regression was done to determine which variables were potential predictors of successful progression from temporary to permanent implantation.

Results

A total of 235 patients were identified. Of these, 186 meet inclusion criteria. Of the 186, 149 underwent SNS for OAB while 37 underwent SNS for IUR. In the OAB group 115 patients (77%) progressed to stage II. The patients who progressed were: younger (<50 vs >50; p=0.320), non-smokers (p=0.006), had fewer pregnancies (<3 vs >3; p=0.007) and fewer vaginal births (<2 vs >2; p=0.019), had nocturia on presentation (p=0.016), no history of hysterectomy (p=0.039) and had greater Pdetrusor at 1st sensation (>5 vs <5; p=0.037). On multivariable analysis, younger age, nocturia and no prior history of hysterectomy continued to be statistically significant. In the IUR group, younger age (<50 vs >50; p=0.106), female gender (p=0.014), weight <73 kg (p=0.004), non-diabetics (p=0.094) and bladder volume at first sensation <250 ml (p=0.031) predicted successful progression from stage I to stage II.

Interpretation of results

Patients with OAB are more likely to progress if they are younger, initially present with nocturia and have no prior history of prior hysterectomy. While patients with IUR who are younger, female, non-diabetic, weigh <73kg and have a bladder volume at first sensation of <250ml were more likely to progress from stage I to stage II.

Concluding message

Age greater than 50, previous hysterectomy and a history of diabetes are associated with lower rates of progression from stage I to stage II Interstim. Yet given the small sample size of our study, a larger prospective study should be done to better determine which, if any urodynamic parameters predict response to stage I and ultimately progression to stage II.

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**HUMAN SUBJECTS: This study was approved by the IRB and followed the Declaration of Helsinki
Informed consent was not obtained from the patients.**