

540: Patient Specific Factors That Correlate With Sacral Neuromodulation Success In Underactive Bladder



Greeshma Venigalla¹, Braian Rene Ledesma¹, Alan Wein¹, Katherine A. Amin¹, **Raveen Syan**¹

¹Department of Urology, Division of Female Urology, University of Miami, Miami, FL

Aims of study

- SNM is a minimally invasive and effective therapy which may be used for patients with underactive bladder (UAB) who do not respond to conservative management as well.
- However, not all patients respond to SNS, and identifying predictors of success is important for optimizing patient selection and outcomes.
- Urodynamic variables, such as Pdet, Qmax, and bladder capacity, have been suggested as predictors of SNS success in UAB patients.
- Comparing the predictive value of these urodynamic variables in predicting SNS success in UAB patients may provide important insights into the use of urodynamic variables in guiding clinical decision-making.

Study design, materials and methods

- Retrospective review of 32 patients who underwent SNS for UAB management at the University of Miami between January 2016 - December 2020
- Preoperative urodynamic variables maximum detrusor pressure (Pdet max), detrusor pressure at maximum flow rate (Pdet at Qmax), average flow rate (Qave), maximum flow rate (Qmax), post-void residual (PVR), end filling detrusor pressure (End Filling Pdet), and catheter use.
- Proportion of patients who had successful final placement of SNS IPG device.

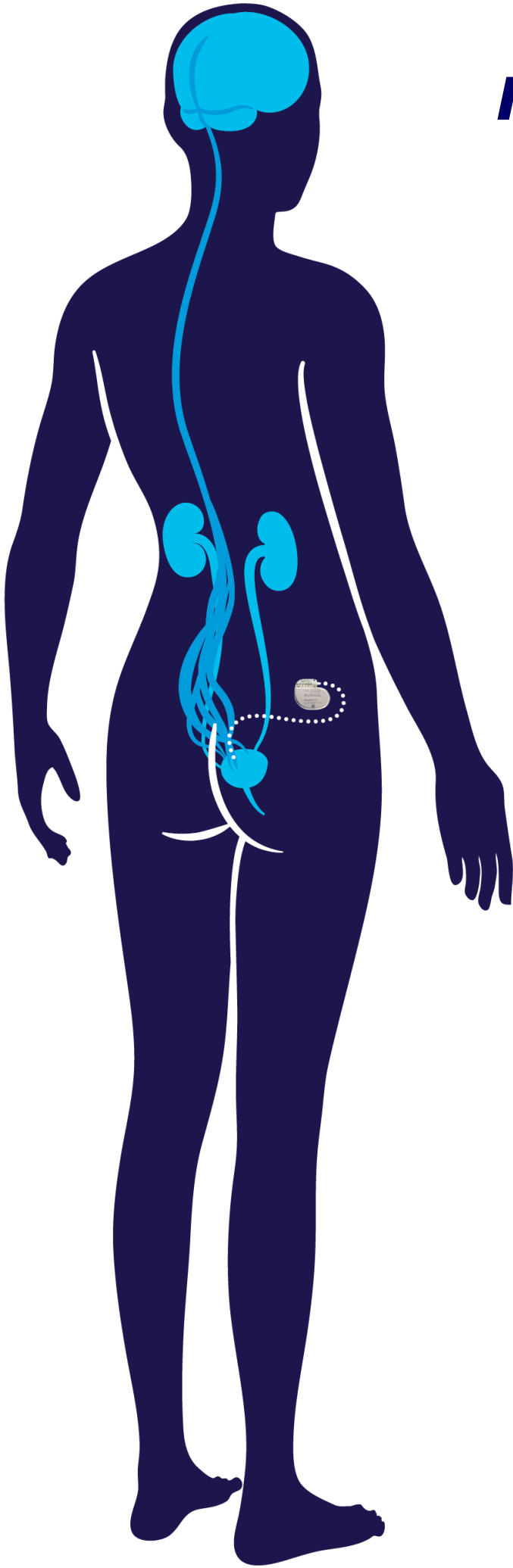
Results and interpretation

	Success	Non-success	p value
Age	57	57	0.99
Gender			
female	24 (86%)	1 (25%)	0.02
male	4 (14%)	3 (75%)	
Race			
white	26 (93%)	4 (100%)	1
black	2 (7%)	0 (0%)	
Ethnicity			
Hispanic	17 (61%)	1 (25%)	0.3
Comorbidities			
neurologic disease	8 (29%)	0 (0%)	0.55
diabetes	4 (14%)	0 (0%)	1
back surgery	4 (14%)	0 (0%)	1
prior BOO	1 (4%)	2 (50%)	0.03
Initial Visit PVR (mL)	65	675	<0.01
Catheter dependency	7 (25%)	4 (100%)	<0.01
Urodynamics Parameters			
PVR on UDS (mL)	220	535	<0.01
Pdet max (cm H2O)	18.7	14.8	0.52
Pdet at Qmax (cm H2O)	13	n/a	
Qmax (mL/s)	8.7	n/a	
Qavg (mL/s)	3.2	n/a	
End filling Pdet (cm H2O)	9.5	n/a	
Valsalva voiding	15 (54%)	n/a	
Unable to void	13 (46%)	4 (100%)	0.1

Table 1. Urodynamic Variables

- The urodynamic profile of patients who progressed to second stage SNS was characterized by lower PVR compared to those who did not progress.
- Patients who require CIC may be less responsive to SNS therapy.
- Patients with prior BOO procedures may have lower success

Sacral neuromodulation may be an effective treatment option for patients with underactive bladder



Conclusions

- Our study provides insights into the factors influencing treatment outcomes following SNM in patients with UAB.
- SNS can be an effective treatment option for patients with UAB – the high proportion of patients who progressed to second stage SNS indicates that the therapy is well-tolerated and efficacious.
- Despite the multifactorial nature of treatment response, our study identifies male gender and average post-void residual (PVR) volume as potential factors associated with SNM success in this population.
- Our findings contribute to bridging the knowledge gap regarding the application and determinants of SNM success specifically in UAB
- We highlight the need for comprehensive patient evaluation and assessment, including detailed medical history and urodynamic evaluation, to optimize treatment strategies and improve outcomes for patients with this challenging condition
- Data may serve as guidance for clinicians in selecting appropriate candidates for SNS therapy and managing patient expectations.

References

1. Janssen, D. A., Martens, F. M., de Wall, L. L., van Breda, H. M. & Heesakkers, J. P. Clinical utility of neurostimulation devices in the treatment of overactive bladder: current perspectives. Med Devices (Auckl) 10, 109–122 (2017).
2. Bayrak, Ö. & Dmochowski, R. R. Underactive bladder: A review of the current treatment concepts. Turk J Urol 45, 401–409 (2019).
3. Nobrega, R. P., Solomon, E., Jenks, J., Greenwell, T. & Ockrim, J. Predicting a successful outcome in sacral neuromodulation testing: Are urodynamic parameters prognostic? Neurourology and Urodynamics 37, 1007–1010 (2018)