

## INTRODUCTION

- Neurogenic bladder is a term used to describe lower urinary tract dysfunction resulting from a wide group of neurologic diseases.
- Several options for treatment are available, however, choosing the right treatment for each patient can be challenging.
- According to international guidelines, Sacral Neuromodulation (SNM) is an alternative surgical option for the treatment of medical refractory neurogenic bladder and/or bowel.
- It is not clear which patients are likely to benefit from SNM implantation.

## OBJECTIVES

- Compare the efficacy and the safety of SNM in neurogenic patients to non-neurogenic (idiopathic) patients.
- Identify patients with neurogenic conditions who most likely could benefit from SNM, and better understand its prospects and limitations in this population.

## MATERIALS AND METHODS

- Retrospective single center chart review of patients who were admitted for InterStim™II implantation between 2017-2021.
- **Indications for SNM:**
  - refractory urge incontinence
  - frequency/urgency
  - non-obstructing urinary retention (NOUR)
  - fecal incontinence
- **Inclusion criteria** – all patients who completed:
  - evaluation diary one week prior to,
  - two weeks of advanced evaluation
  - follow-up of at least 6 weeks after SNM

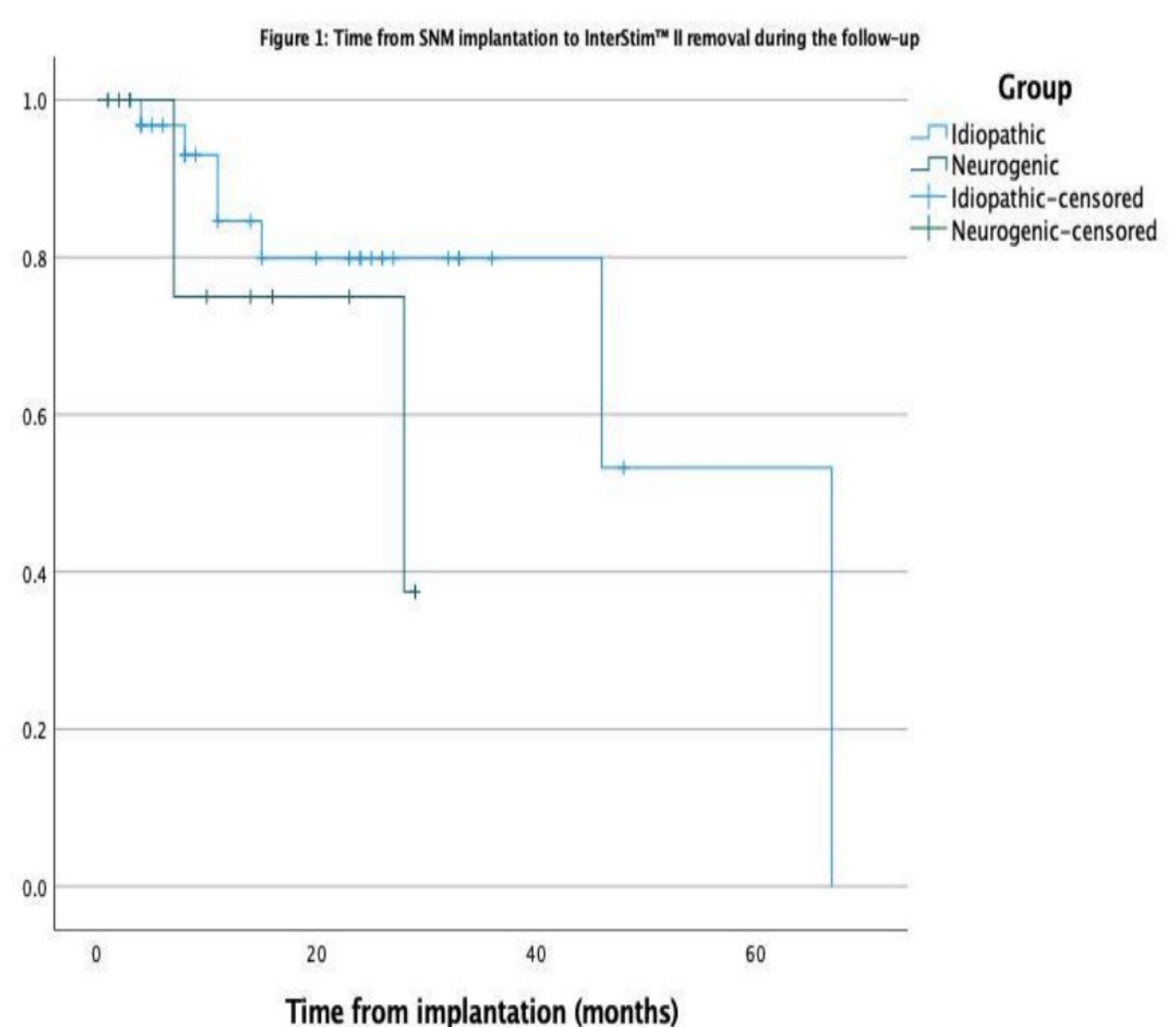
- **Group 1 = neurogenic** patients
- **Group 2 = idiopathic** patients
- **Successful outcome** was defined by **at least 50% improvement** in symptoms documented in the patients' diaries.
- **Adverse outcomes:** revision surgeries, removal of InterStim™II etc.
- **Categorical and continuous variables were analyzed** by chi-square/Fisher exact and t-student tests, appropriately. Kaplan-Meier analysis was performed to compare the time from SNM implantation till InterStim™II removal between study groups.

## RESULTS

- 57 patients [mean age of 62.07±15.91 y.o.] (**Table 1**)
- Neurogenic patients' etiologies:
  - Discopathy or spinal stenosis = 7
  - Multiple Sclerosis = 3,
  - Parkinson's disease = 2,
  - Partial sacral agenesis = 1,
  - Low anterior resection syndrome = 1.
- Most patients are females (64%)
- Most frequent indication for a surgery – NOUR (79%)

- **No significant difference** between study groups in (**Table 1/Figure 1**):
  - Demographic characteristics
  - Surgery duration
  - Successful advanced evaluation
  - Median follow-up after SNM implantation
  - Number of follow-up outpatient clinic visits for a regular checkup and/or a troubleshooting
  - Long-term success rate
  - Time to InterStim™II removal

Table 1	Group 1	Group 2	
	Neurogenic	Idiopathic	
	n=14	n=43	
<b>Patient demographics</b>			
Female (n, %)	9 (64%)	29 (67%)	p=1
Age (years)	62.43±14.18	61.95±16.59	p=0.918
<b>Indication (n, %)</b>			
Non-obstructive urinary retention	11 (79%)	27 (63%)	p=0.515
Fecal ± Urinary incontinence	3 (21%)	15 (35%)	
Refractory overactive bladder	0 (0%)	1 (2%)	
<b>Implantation</b>			
Surgery duration (minutes)	86±24	87±27	p=0.950
Passed successful two-trial period (n, %)	13 (93%)	33 (77%)	p=0.185
<b>Follow-up</b>			
Follow-up duration (months)	10.79±9.77	17.62±14.94	p=0.062
Outpatient clinic visits (per follow-up month)	0.38±0.25	0.34±0.21	p=0.676
Stimulator reprogramming events (per follow-up month)	0.07±0.14	0.10±0.15	p=0.465
SNM removal during follow-up (n, %)	3 (23%)	7 (21%)	p=1
Clinical Success (n, %)	9 (64%)	25 (58%)	p=0.762



## CONCLUSIONS

- SNM is a **safe procedure in neurogenic patients with a similar rate of adverse events.**
- Patients with **neurogenic bladder and/or bowel** who are refractory to the conservative treatments could benefit from SNM with a **similar success rate.**
- SNM **could be offered** in selected neurogenic patients.