

# Incidence and predictors of failure in patients with sacral neuromodulation

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## INTRODUCTION

- Sacral neuromodulation (SNM) is a treatment for various lower urinary tract and bowel dysfunctions, such as overactive bladder, urinary retention, fecal incontinence, and constipation.
- Although SNM can be effective for many patients, some may experience failure or suboptimal outcomes.
- Understanding the factors contributing to SNM failure can help tailor treatment plans and manage expectations.
- In this study, we examined the factors associated with SNM failure.

## METHODS

### Study design and Study subject

- Retrospective cohort study involves patients who underwent sacral neuromodulation insertion or revision between 2020 and 2024.

- At a single, high-volume tertiary hospital in Toronto, Canada.

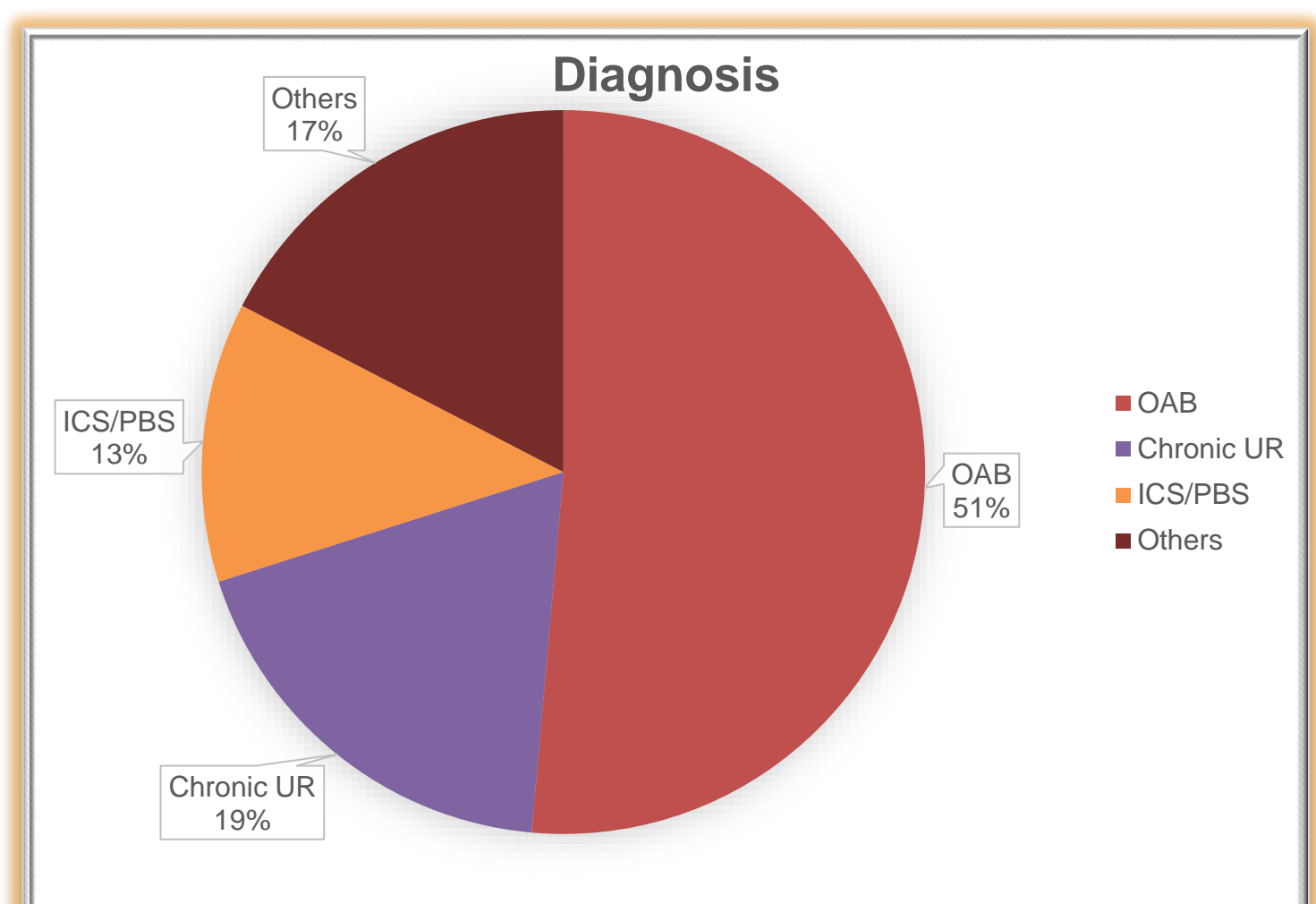
- **Follow-up duration of up to 28 years.**

### **Exclusion criteria:**

- All patients with less than six months of follow-ups,
- Patients who lost their follow-up appointments,
- Those who had failed stage one SNM.
- The medical records of included patients were reviewed for:
  - demographic data,
  - Diagnosis,
  - complications,
  - management of complications,
  - additional therapy rate,
  - outcomes

## RESULTS

- Of 289 patients who underwent insertion or revision of SNM, 257 were included in our study.
- The majority were female (201; 78%) with an average age of  $61 \pm 13.6$  years.
- The failure rate of SNM in our patients was 22.6%.
- 42% of our patients were obese ( $110$ ; 42%,  $BMI > 30$ ) : an average BMI of  $29.6 \pm 6.6$ . the average BMI is almost the same in patients with successful and failed SNM treatment ( $29.7 \pm 7.3$ ;  $p = 0.80$ ).
- We found that the average age was higher in the SNM failure group ( $65.9 \pm 12.0$ ;  $p = 0.006$ ).



- Patients with failed SNM experienced more voltage usage ( $p = .095$ ), frequent reprogramming (71.4%;  $p < .001$ ), infection or pain at implantable ( $p < .001$ ).
- Inserting sacral neuromodulation on the contralateral side in patients who have lost efficacy over time has been associated with a higher success rate, whether using two devices simultaneously or only one at a time (95-100%;  $p < .001$ ).

## CONCLUSION

- Pain at the site of IPG, infection, elderly status, and frequent reprogramming were found to be common in patients with failed SNM treatment.
- It is important to note that while these factors do not necessarily indicate that SNM will be ineffective for all patients, they may increase the risk of treatment failure. Therefore, they should be thoroughly considered when assessing patients with SNM.