GLOBAL INTERSTITIAL CYSTITIS BLADDER PAIN SOCIETY

Volume 7 Issue 4 || April 2025

GIBS NEWSLETTER

Sacral Neuromodulation in Bladder Pain Syndrome

Latest Updates

GIBS PERIODIC CASE BASED DISCUSSION
Presented by
Danat Al Emarat Hospital

- ***Dr. Eman Aluthmani as Organizing Chairperson***

Date: 9th April 2025
Time: 7:30 PM – 8:30 PM IST | 6:00 PM – 7:00 PM UAE

DECADE Celebration!!
10th Annual Congress on IC/BPS - GIBS 2025

Date: 23rd & 24th August 2025
Venue: Kokilaben Dhirubhai Ambani Hospital, Mumbai

Theme: Decode, Demystify, Drive IC/BPS

CALL FOR ABSTRACT
Last Date for Submission: May 01ST, 2025

CALL FOR BEST VIDEOS
Last Date for Submission: May 01ST, 2025

Abstract

The chronic illness known as Bladder Pain Syndrome (BPS) is characterized by persistent pain or discomfort in the bladder area, frequently accompanied with urgency and frequent urination. This illness can have a major impact on day-to-day living, making routine tasks challenging. Although there are numerous methods for treatment, sacral neuromodulation (SNM) has shown promise. The origins of BPS, the operation of SNM, its efficacy, its beneficiaries, possible hazards, and upcoming developments are all explained in this review (1).

Introduction

Interstitial cystitis, another name for bladder pain syndrome (BPS/IC), is a disorder that causes persistent pelvic and bladder pain as well as an increased urge to urinate. Many people discover that standard therapy like medicines and bladder instillations don't provide much relief, even with a variety of treatment alternatives.Sacral neuromodulation (SNM) may be an option if these therapies don't work. SNM is a technique that uses electrical stimulation of particular nerves to help control bladder function (1).

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Upcoming Newsletter - May 2025

Overactive Bladder and Prolapse

Abstract

OAB and POP often coexist. Prolapse can alter bladder function and contribute to symptoms of urgency or incontinence. Treatment may include pelvic floor exercises, bladder training, medications, pessary devices, or surgery, depending on the severity and the patient's needs.

Stay Tuned!!!

AUTHOR

Dr. Meera Ragavan

Senior Consultant Urogynaecologist and Robotic Surgeon, Apollo hospitals, Chennai, India.
Core Member GIBS & FEPPA

Understanding Bladder Pain Syndrome

The precise cause of BPS is still unknown because it is a complicated illness. But according to study, it involves inflammation, increased pain sensitivity, and issues with the bladder nerves. Some patients may experience discomfort from irritants in their urine due to problems with the bladder lining. For others, an overactive nerve response may cause the bladder to seem uncomfortable or full even though it isn't (3).

The Mechanism of Sacral Neuromodulation

SNM stimulates the sacral nerves, which are essential for bladder function, with modest electrical pulses. These nerves assist control urination by transmitting signals from the bladder to the brain. These signals may malfunction or become hyperactive, which can exacerbate BPS symptoms. SNM helps restore normal bladder function by carefully regulating these nerve impulses, which lessens pain and the urge to urinate often (2).

Clinical Studies on SNM for BPS

Numerous research have looked into the effectiveness of SNM for BPS patients.

- For example, Peters et al. (2010) reported that SNM significantly reduced patients' bladder discomfort and frequency of urination in a study spanning several medical institutions (1).
- 60–70% of patients reported long-term symptom alleviation, according to Siegel et al. (2014) (2).
- In certain individuals, SNM proved to be more successful than botulinum toxin injections, according to Seth et al. (2019) (3).
- After reviewing several trials, Martirosian et al. (2022) verified that SNM is particularly beneficial for patients who have not responded to previous treatments (4).

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Anatomical Overview of Sacral Nerves

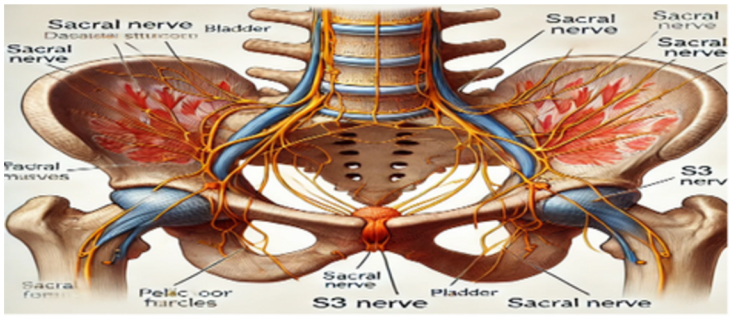

Figure 1: Diagram illustrating the sacral nerves and their connection to the bladder and pelvic floor muscles.

Who Can Benefit from SNM?

- Not all BPS patients are suitable candidates for SNM. Patients who: Remain symptomatic after attempting alternative treatments are the optimal candidates.
- During the SNM trial period, demonstrate a reduction in symptoms.
- Do not suffer from any illnesses that could compromise a safe implantation (4).

The SNM Process: What to anticipate

Two steps are involved in implanting SNM:

1. Trial Phase: Patients are observed for one to two weeks to determine whether symptoms improve after a temporary electrode is positioned close to the sacral nerves (1).
2.
3. Permanent Implantation: A tiny neurostimulator device is placed beneath the skin following a successful trial period.

Illustration of Sacral Neuromodulation Implantation

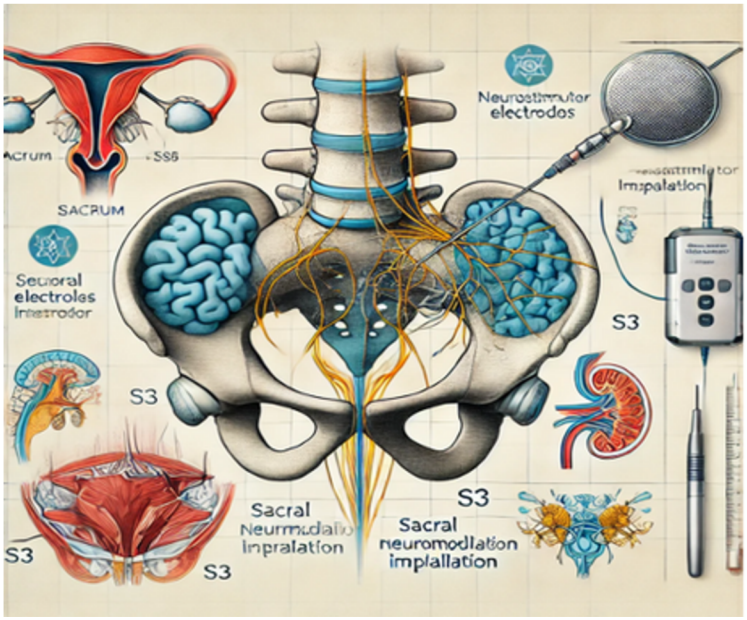

Figure 2: Step-by-step illustration showing the placement of the neurostimulator and lead electrodes near the sacral nerves.

How Effective Is SNM? Is It Secure?

According to studies, SNM helps a lot of BPS sufferers by:

1. Usually reducing bladder discomfort by at least 50% (2).
2. Reducing frequent urination desires.
3. Enhancing patients' quality of life by reducing their dependency on drugs (3).

SNM does, however, carry some hazards, such as the following:

1. The device moving from its initial position.
2. Infection at the location of implantation.
3. Malfunction of the device or gradual decline in efficacy (4).

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Graph of Clinical Study Data

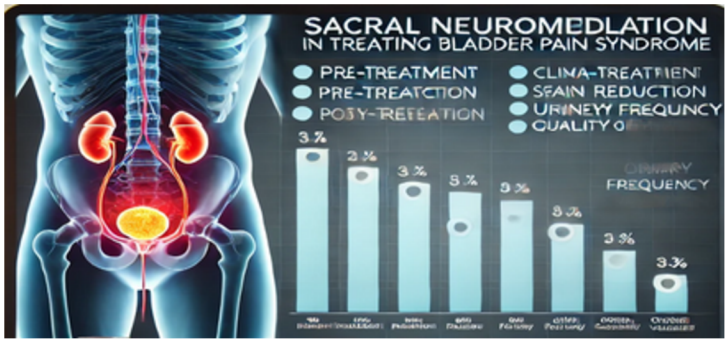

Figure 3: A comparison of pre-treatment and post-treatment symptom scores, including pain reduction, urinary frequency improvement, and overall quality of life.

Future Advancements in SNM

SNM technology is constantly being improved by scientists, who are concentrating on the following areas: Smaller, more sophisticated devices that are compatible with MRI scans, last longer, use less energy, and make follow-up imaging safer and simpler for patients (2).

Stimulation parameters that are specifically tailored to each patient's particular nerve activity, resulting in improved symptom management and fewer adverse effects (2).

Long-term difficulties and expenses can be minimized using rechargeable implants that increase the device's lifespan and lessen the need for frequent surgical replacements.

Better long-term results and more individualized treatment programs can result from wireless and remote-controlled programming that enables physicians and patients to change settings without requiring extra steps (3).

SNM is combined with behavioral or medication interventions in combination therapy approaches to increase efficacy. The potential use of SNM with nerve-blocking or bladder relaxants to improve symptom alleviation is still being investigated (4).

Based on real-time patient input and data gathering, artificial intelligence (AI) and machine learning applications are being investigated to optimize SNM device programming, enabling predictive modifications that enhance patient comfort and efficacy (4).

Conclusion

For patients with bladder pain syndrome who have tried every other therapy option, sacral neuromodulation is a life-altering choice. SNM helps restore normal bladder function by gently stimulating the sacral nerves, which greatly lessens pain and urgency during urinating. Although there are certain hazards, they are frequently outweighed by the advantages, which improves many patients' quality of life. It is anticipated that SNM will become even more accessible and effective as technology develops, giving those who are battling this difficult illness hope.

References

1.Peters KM, Carrico DJ, Wooldridge LS, et al. "Percutaneous sacral nerve stimulation for intractable interstitial cystitis: A multi-center study." Journal of Urology, 2010.

2.Siegel SW, Noblett KL, Mangel J, et al. "Five-year follow-up results of a prospective, multicenter study of sacral neuromodulation for overactive bladder." Journal of Urology, 2014.

3.Seth JH, Haslam C, Panicker JN. "Sacral neuromodulation versus botulinum toxin injections for refractory bladder pain syndrome: A comparative study." Neurourology and Urodynamics, 2019.

4.Martirosian TE, Patel P, Werner M. "Efficacy of sacral neuromodulation in the treatment of interstitial cystitis/bladder pain syndrome: A systematic review." Neurourology and Urodynamics, 2022.

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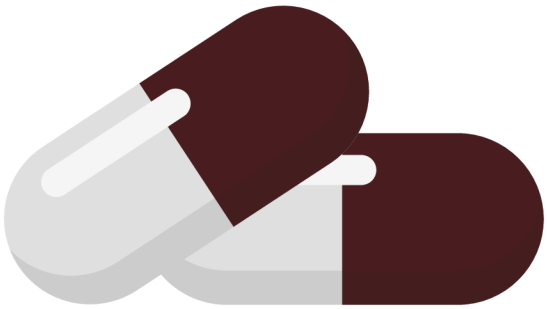
INTRODUCING DRUG SNIPPET FOR TREATMENT OF ICBPS



Pentosan Polysulfate Sodium (PPS)

Mechanism of Action

Pentosan Polysulfate Sodium is a semi-synthetic polysaccharide that acts as a bladder protectant by replenishing the deficient glycosaminoglycan (GAG) layer of the bladder urothelium.

PPS acts as a bladder protectant primarily by:
·Replenishing the Glycosaminoglycan (GAG) Layer
·Anti-inflammatory Effects
·Anticoagulant and Fibrinolytic Action
·Modulation of Bladder Sensory Nerve Activity

Pharmacokinetics

Absorption: Poor oral bioavailability (~3-6%) due to extensive first-pass metabolism in the liver and gut. Half-Life, Elimination: 4.8 hr

Distribution: Uroepithelium of the genitourinary tract with lesser amounts found in the liver, spleen, lung, skin, periosteum, and bone marrow

Metabolism: Spleen and liver; partial depolymerization in the kidney to a large number of metabolites

Excretion: Faeces (58% as unchanged drug) Urine (6% primarily as metabolites)

Dosing

Typically, 100 mg three times daily, taken on an empty stomach.

Efficacy: Some patients experience symptom relief after 3-6 months of treatment.

Combination Therapy: Often used with other therapies like hydroxyzine, amitriptyline, or intravesical treatments for better symptom control.

Side Effects, Contraindications

Side Effects

- Gastrointestinal symptoms (diarrhea, nausea)
- Hair loss (reversible alopecia)
- Headache and dizziness
- Rare but serious concern: Pentosan-associated maculopathy – a progressive retinal toxicity that may lead to vision loss with long-term use.

Contraindications: Hypersensitivity

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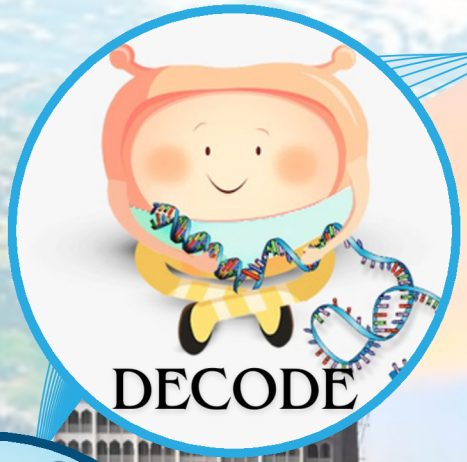
Celebrating a Decade!

AUGUST 23rd & 24th, 2025

HIGHLIGHTS

- Advances in IC/BPS
- Workshops
- Orations from Subject Expert around the Globe!



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- Time: 09:00AM – 10:30AM IST
- Finalist Announcement: By 10th May
- Limited Slots Available!
- Registration: Mandatory!

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