**Reductions in Opioid Consumption with Percutaneous Medial Branch Peripheral Nerve Stimulation for Chronic Low Back Pain**

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**INTRODUCTION**

- Chronic low back pain (LBP) is one of the most prevalent and challenging musculoskeletal conditions and is the leading cause of disability in adults.

**CONVENTIONAL NEUROMODULATION:**

- Requires surgery and permanent implant
- Cost may relegate therapy to use later in the treatment continuum

**MINIMALLY INVASIVE, PERCUTANEOUS PNS:**

- Wearable stimulator and percutaneous fine-wire, collated lead (designed to anchor in tissue with excellent safety profile) could overcome limitations of previous systems

**MATERIALS & METHODS**

Ongoing IRB approved study; informed consent was obtained from each participant.

**Key Eligibility Criteria:**

- Participants with chronic LBP (≥ 3 months); no radicular pain
- Stable medication usage at least 1 month prior to baseline
- No prior lumbar surgery or RFA within prior 6 months
- No anesthetic injections within prior 3 months
- Score of ≤ 20 on Beck Depression Inventory

**Lead Placement:** Bilateral, percutaneous PNS leads, targeting medial branches of the dorsal ramus in the center of the region of pain

**Image Guidance:** ultrasound and/or fluoroscopy

**Confirmation:** Stimulation of medial branch confirmed by selective activation of multifidi

**PNS Treatment:** Stimulation for 6-12 hrs/day for up to 60 days
- Participants continued normal activities
- Leads removed with gentle traction
- Participants return for long-term follow-up visits

**RESULTS**

**Participant Demographics (n = 11):**

- Average Age: 60.8 years (40.1 – 82.1)
- Average Baseline Pain Score: 6.3 (BIPI-5)
- Average Duration of LBP: 17.0 years
- Spinal Level of Lead Placement: L2 (n=1), L3 (n=1), L4 (n=6), L5 (n=3)

**Outcomes:**

- At End of Treatment (EOT) 64% reported ≥50% reduction in opioid consumption with PNS(n=7/11)
  - Avg. 29.7 mg morphine equivalent (MME) reduction among responders at EOT
- At 3 months post EOT, 73% reported ≥50% reduction in opioid (n=8/11)
  - Avg. 23.2 MME reduction among responders at 3 months post EOT
- Majority of participants experienced clinically-significant reductions in average pain intensity, disability, and pain interference.

**Safety:**

- No serious or unanticipated device-related adverse events

**REFERENCES & ACKNOWLEDGEMENT**


**CONCLUSIONS**

- Percutaneous PNS treatment for up to 60 days can significantly reduce usage of opioid analgesic medications in patients with chronic LBP.
- These results support earlier findings that percutaneous PNS delivered for up to 60 days can relieve chronic LBP, which leads to improvement in disability and quality of life, without a permanently implanted device.