



Functional outcomes and healthcare utilization (HCU) trends in postsurgical and nonsurgical patients following high-frequency (10kHz) spinal cord stimulation (SCS) therapy.

Vinny Francio MD¹, Logan Leavitt DO², John Alm DO³, Daniel Mok DO², Byung-Jo Victor Yoon MD², Niaman Nazir MD², Christopher Lam MD², Usman Latif MD², Timothy Sowder MD², Edward Braun MD², Andrew Sack MD², Talal Khan MD², Dawood Sayed MD².

1. Washington University School of Medicine in St. Louis; 2. The University of Kansas Medical Center; 3. West Virginia University.

BACKGROUND

- Chronic low back pain (CLBP) is the leading cause of disability in the United States and is associated with a continuously increasing trajectory of healthcare expenditure.
- It is imperative to evaluate strategies aimed at reducing disability and improving healthcare utilization (HCU), particularly among high utilizers of healthcare resources, such as individuals with CLBP.
- Spinal cord stimulation (SCS) therapy has demonstrated efficacy in reducing pain, improving function, and decreasing HCU.
- However, various patient-specific factors must be considered as they may influence SCS outcomes.

OBJECTIVE

To investigate whether a history of spinal surgery impacted functional outcomes and HCU trends following 10 kHz SCS therapy.

METHODS

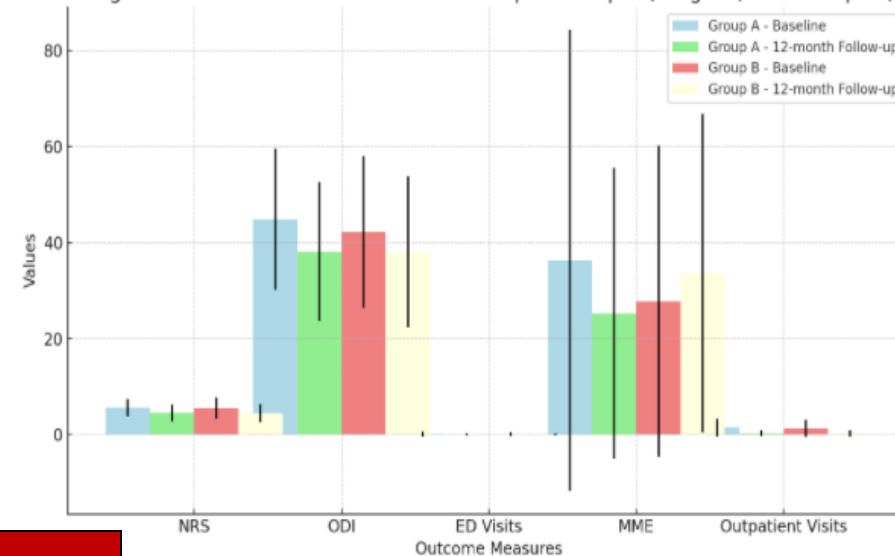
- Single-center retrospective observational study.
- IRB approval obtained.
- Two groups: surgical history (group A) and non-surgical history (group B).
- Functional outcomes: Pain (NRS) and disability (ODI).
- HCU outcomes: Number of ED visits, number of outpatient visits for pain procedures, opioid utilization measured by MME.
- Outcomes were compared for the pre-and-post implant periods up to 12-months.

RESULTS

- 160 subjects; 81 surgical (group A) and 79 nonsurgical (group B).
- Mean age of 62 years, 43% males, 57% females; BMI of 32.
- Self-reported pain improvement among all subjects 67.5% with a mean improvement of 66.8% in group A and 68.3% in group B.
- MCID in pain relief was achieved in 37% of subjects in group A and 39% of subjects in group B. MCID in disability was achieved in 45% of subjects in group A, and 42% of group B participants (24,25). Both groups had a reduction in pain and disability scores from the baseline, however, group B did not reach statistically significant reduction in disability. There was a statistically significant reduction in outpatient visits for interventional procedures for both groups individually, and only group A demonstrated a statistically significant reduction in ED visits from baseline. Interestingly, there was no statistically significant change in opioid use in either group.

Comparison (Surgical A vs Nonsurgical B)	Outcome	p-value
	NRS	0.97
	ODI	0.52
	ED visits	0.47
	MME	0.04*
	Outpatient visits for interventional procedures	0.62

Outcome Changes from Baseline to 12-month Follow-up in Group A (Surgical) and Group B (Nonsurgical)



CONCLUSION

- This study found that 10 kHz SCS therapy was equally effective in providing MCID improvements in pain, disability and health care utilization, regardless of a history of spinal surgery. There was no statistical significance in pain and disability outcomes between the two groups, nor differences in HCU trends measured by ED and outpatient procedure visits. Our study uniquely reports findings on one of the largest cohorts of real-world 10 kHz SCS data published to date analyzing pain, function, and HCU trends collectively, in patients with and without a history of lumbar spine surgery. The results may suggest that a history of spinal surgery might not significantly impact the effectiveness of 10 kHz SCS therapy in terms of meaningful clinical important difference in pain relief, functional improvement, and healthcare utilization.