

The effects of 10 kHz spinal cord stimulation in persistent low back pain of neuropathic origin: the Maiden Back Study

G. Baranidharan^{1,2}, R. Feltbower², B. Bretherton^{1,3}, T. Crowther¹, L. Cooper¹, P. Castino¹, H. Radford⁴

¹ Pain Management Department, Leeds Teaching Hospitals NHS Trust, Leeds, UK

² School of Medicine, Faculty of Medicine and Health, University of Leeds, UK

³ School of Biomedical Sciences, Faculty of Biological Sciences, University of Leeds, UK

⁴ School of Medicine, Leeds Institute of Clinical Trials Research, Faculty of Medicine and Health, University of Leeds, UK

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1. Introduction

a. Spinal cord stimulation (SCS) is a recommended treatment for chronic neuropathic pain.

b. Persistent nonoperative low back pain of neuropathic origin has profound negative impacts on the lives of patients.

c. Preliminary evidence suggests 10 kHz SCS can improve symptoms in back pain patients who have not had surgery.

Aim: This was a prospective, single centre, open-label trial undertaken in the Leeds Teaching Hospitals NHS Trust that aimed to investigate the effects of 10 kHz SCS in patients with nonoperative back pain of neuropathic origin, specifically: hyperalgesia or allodynia.

3. Results

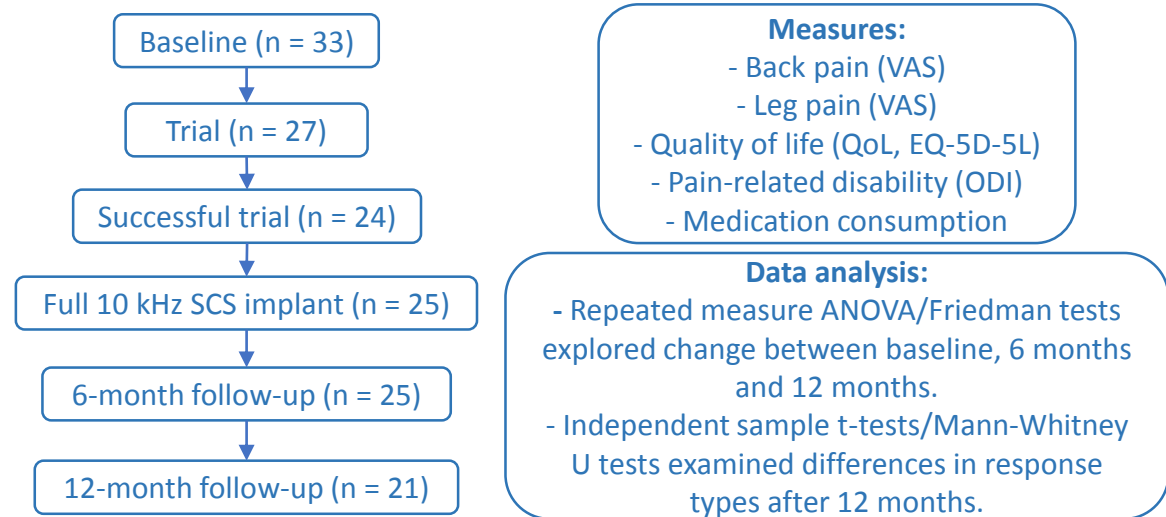
	Baseline	6 months	12 months
Back pain (VAS, cm)	8.00 ± 0.25	* 3.76 ± 0.67	* 3.43 ± 0.63
Leg pain (VAS, cm)	5.32 ± 0.70	* 2.31 ± 0.62	* 2.67 ± 0.68
QoL (EQ-5D-5L)	0.32 ± 0.06	* 0.60 ± 0.06	* 0.58 ± 0.05
Pain-related disability (ODI)	67.29 ± 2.76	* 38.67 ± 4.67	* 45.14 ± 4.65

Medication consumption stopped in 37% of cases with no increases reported.

Over three-quarters (76%) of subjects encountered >30% improvement in their back pain between baseline and 12 months.

Baseline measure	<30% back pain improvement (n = 5)	≥30% back pain improvement (n = 16)
Neuropathic pain (PainDETECT)	12.00 ± 3.21	* 20.63 ± 1.76
Pain-related disability (ODI)	77.60 ± 3.43	* 64.06 ± 3.07

2. Materials and methods



4. Discussions

a. 12 months of 10 kHz SCS significantly improved back and leg pain, QoL and pain-related disability in patients with non-surgical neuropathic back pain. Medication consumption also improved.

b. Findings suggest that short-term use of 10 kHz SCS may confer benefits to patients with nonsurgical low back pain.

5. Conclusions

With further work exploring the longer-term effects of 10 kHz SCS (i.e., >24 months post-implant) and incorporating a control arm, the efficacy of this therapy in difficult to treat hyperalgesia and allodynia may be established.