Spinal Cord Stimulation for Chronic Pain – Data from A Single Centre

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Background

Chronic neuropathic pain, a complex and often debilitation condition, challenges both patients and healthcare providers. Spinal cord Stimulation (SCS) therapy is an evidence based therapy recommended by HIS and NICE(1) for chronic neuropathic pain. It is best delivered in multi-disciplinary context. There is reduced uptake and significant geographical variation in provision of SCS therapy due to its cost and the required technical expertise (2). Though the provision of SCS therapy in NHS Grampian expanded in 2013, a recent epidemiological healthcare needs evaluation highlights the need further (3). In the last decade, SCS therapy has expanded from a single tonic waveform therapy to different types such as high frequency, burst stimulation and sub-wave SCS therapies (4), offering a choice to personalise the therapy.

A multidisciplinary team reviews the patients regularly for optimization of SCS therapy, analgesics and support them to live well with pain. This report is a service evaluation of clinical outcomes.

Methods

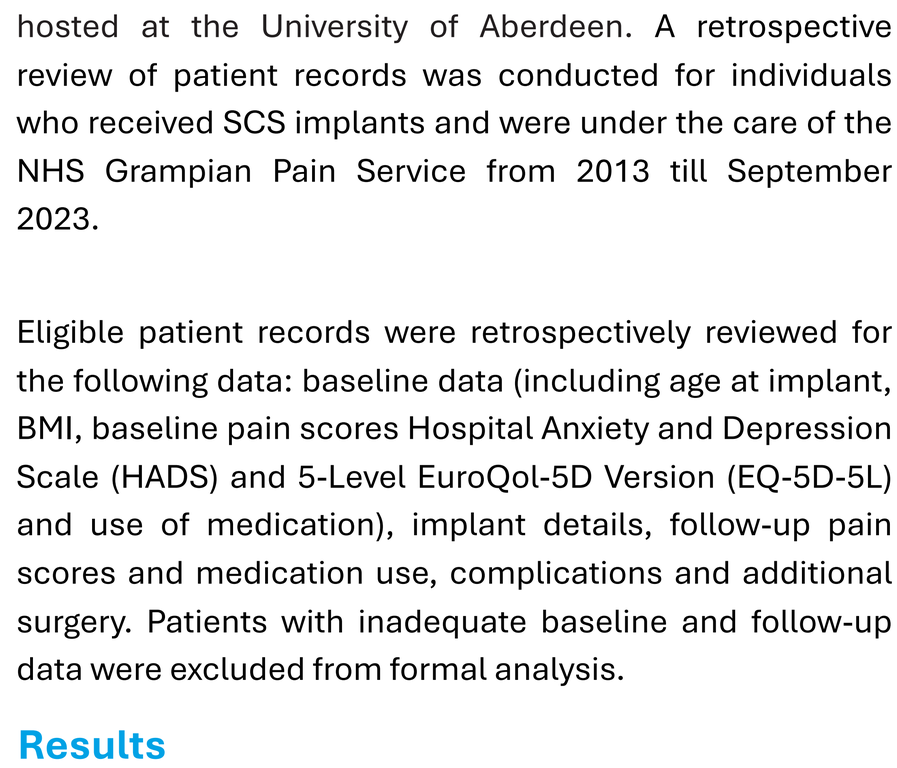
After approval from the institutional Quality Improvement & Assurance team, study data were collected and managed using REDCap electronic data capture tools hosted at the University of Aberdeen. A retrospective review of patient records was conducted for individuals who received SCS implants and were under the care of the NHS Grampian Pain Service from 2013 till September 2023.

Eligible patient records were retrospectively reviewed for the following data: baseline data (including age at implant, BMI, baseline pain scores Hospital Anxiety and Depression Scale (HADS) and 5-Level EuroQol-5D Version (EQ-5D-5L) and use of medication), implant details, follow-up pain scores and medication use, complications and additional surgery. Patients with inadequate baseline and follow-up data were excluded from formal analysis.

Results

90 patients with SCS implants are under the care of NHS Grampian Pain services, of which 72 were included for formal analysis.

Chronic pain diagnosis prior to SCS implantation

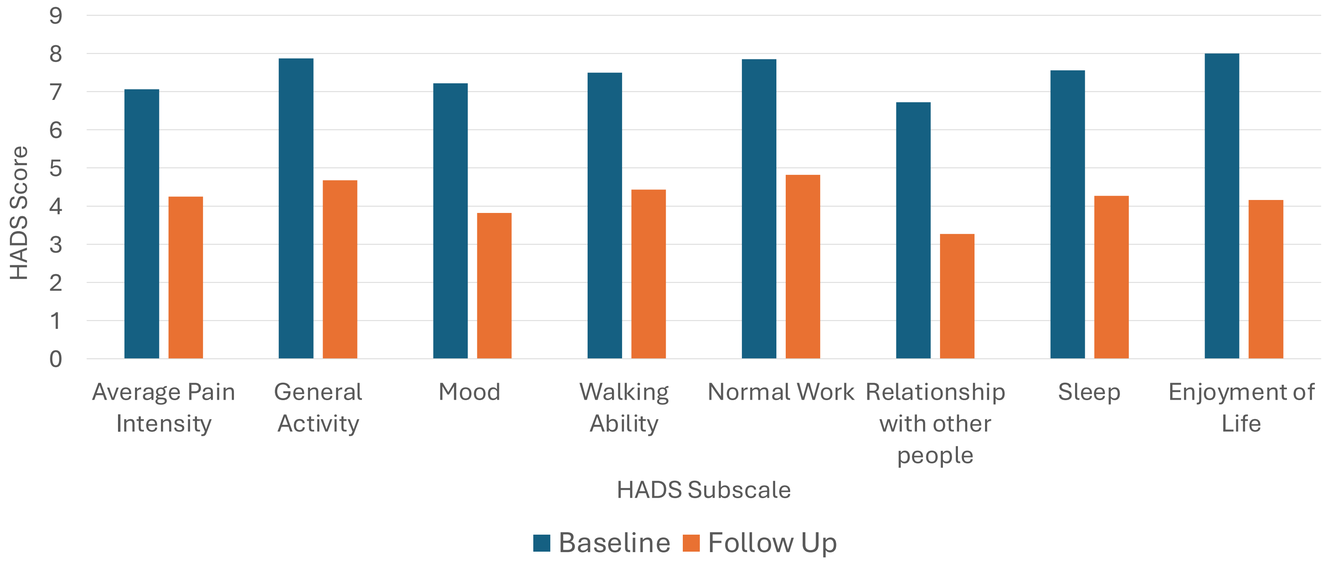


Follow-Up

At a mean follow-up of 10.4 ± 41.8 months, patients reported 58.1 ± 32.1% pain relief from SCS.

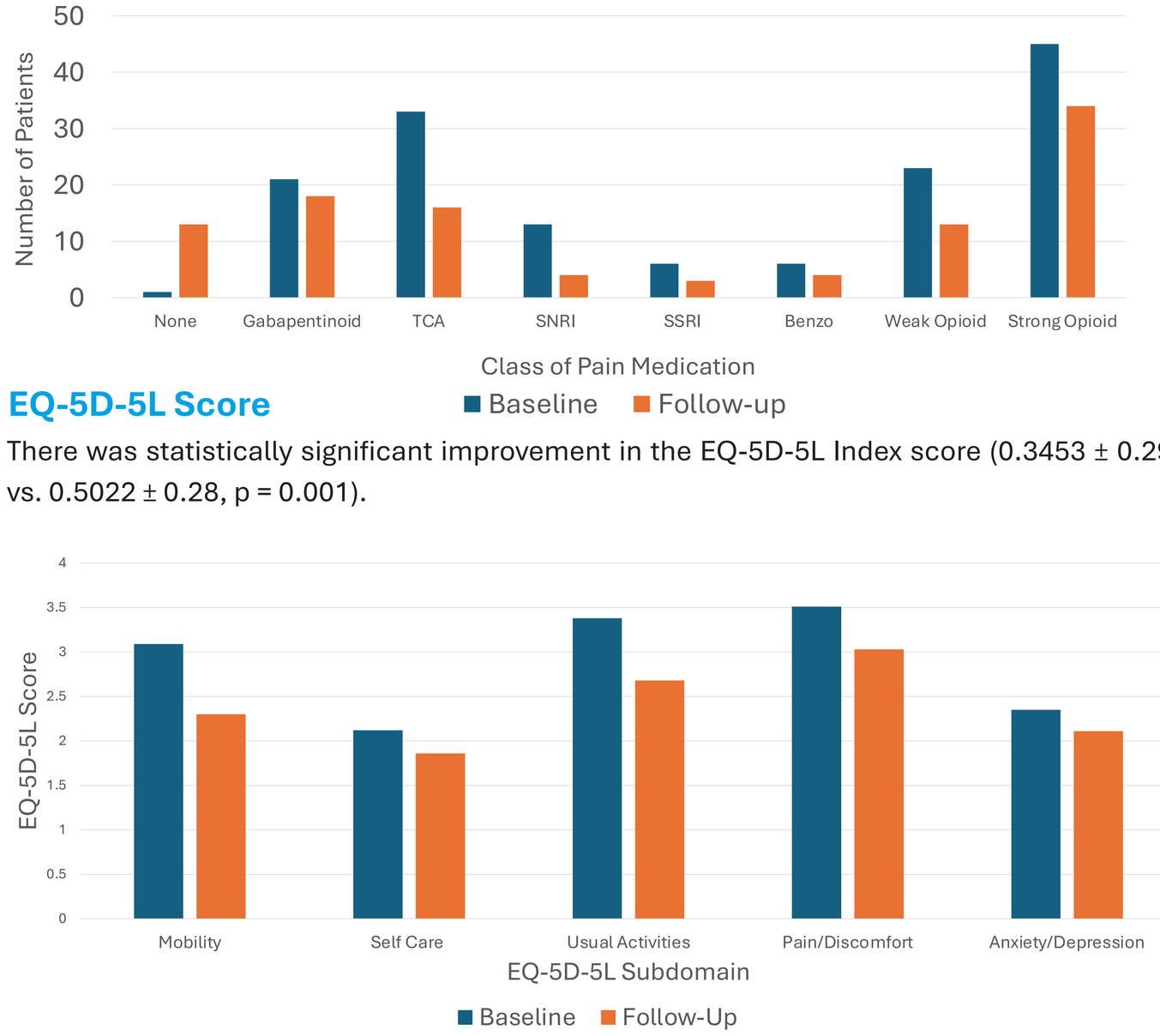
HADS Score

There was statistically significant improvement in all subscales of the HADS Score with a mean improvement of 2.8 ± 2.3 in average pain intensity ($p < 0.05$).



Medications

There was a statistically significant reduction in the number of analgesic medications taken by patients after SCS (2.1 vs. 1.3, $p = 0.02 \times 10^{-6}$).



EQ-5D-5L Score

There was statistically significant improvement in the EQ-5D-5L Index score (0.3453 ± 0.29 vs. 0.5022 ± 0.28, $p = 0.001$).

Discussion

Our service evaluation highlights that SCS is carried out for chronic neuropathic pain alone as indicated by HIS. Improvement in various domains of patient-reported outcomes is seen in a majority of our patients, This is line with published literature (1). With increasing incidence of chronic pain, there is continued need to increase the provision of this valuable therapy.

Conclusion

Our service evaluation highlights that improvements in both mental health, and quality of life can be achieved by SCS therapy.

References:

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