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Incidence and Etiology of Impediments to Spinal Cord Stimulator Trial Progression

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Introduction

Spinal cord stimulation (SCS) has been found effective in managing chronic pain for various conditions including neuropathic and radicular pain.¹ Following a physician-patient discussion confirming SCS as a potential therapy, a preoperative evaluation is required. Despite initial candidacy, not all patients proceed to the SCS trial. Comprehending the obstacles that hinder advancement to SCS therapy could offer strategies to enhance patient access. The objective of this study is to evaluate the incidence and etiology of impediments to SCS trial progression.

Materials and Methods

Following IRB approval, patients under consideration for a spinal cord stimulator trial between September 2013 and July 2023 were retrospectively reviewed. Electronic health records were used to identify the impediment to trial progression (Table 1). Impediments secondary to MRI documented contraindications to lead placement were excluded from this study.

Results/Case Report

Of the 340 patients identified for a spinal cord stimulator trial, a total of 73 (21.4%) did not progress forward for a reason unrelated to a pre-operative spine MRI (Table 1). Additionally, 304 (89.4%) completed pre-operative psychological assessment. For these 304 patients, 2 (0.66%) did not receive psychological clearance.

Medical concerns identified during pre-operative testing were associated with nearly half of the impediments encountered for a total incidence of 41.8% (n=33). Within this classification, 29.1% (n=23) of impediments were related to a medical condition (Table 2), and 12.9% (n=10) were related to patient need for medical optimization. Of the ten impediments related to medical optimization, all were related to modifiable risk factors including elevated glucose (50.0%, n= 5), tobacco use (40.0%, n = 4) and elevated BMI (10.0%, n= 1).

Patient-directed decisions accounted for 30.4% (n =24) of all impediments (Table 3). For the 17 patients who decided not to progress, there was an average of 18.7 days between the patients' last appointment and patient cancellation of the trial. Of the 24 patients, nine (37.5%) completed pre-operative testing.

Furthermore, the incidence of patient financial responsibility and health-care coverage related impediments was 18.9% (n=15, Table 1). These impediments include eight (10.1%) related to insurance coverage or denial, five (6.3%)

due to workers' compensation denial, and two (2.5%) due to patient financial responsibility.

Discussion

Over 20% of patients identified as candidates for SCS therapy did not advance to SCS trial. More than 40% of the impediments were attributed to medical concerns identified during the preoperative evaluation, underlining the importance of this step in the preoperative process. Inadequately controlled diabetes, tobacco use, and elevated BMI contributed to failure to progress to SCS trial, underscoring the need for medical counseling. In addition, impediments related to health-care coverage, including denials and patient financial responsibility, hindered patient access. Efforts are warranted to alleviate financial obstacles and advocate for changes in insurance coverage. While psychological evaluations are a requirement for SCS treatment, fewer than 1% of those evaluated were excluded from therapy, casting doubt on the necessity of this clearance requirement. This study offers an understanding of the factors associated with failure to progress to SCS trial, which can be leveraged to devise strategies for reducing barriers to treatment.

References

1. Sdrulla AD, Guan Y, Raja SN. Spinal Cord Stimulation: Clinical Efficacy and Potential Mechanisms. *Pain Pract.* 2018 Nov;18(8):1048-1067. doi: 10.1111/papr.12692. Epub 2018 Apr 23. PMID: 29526043; PMCID: PMC6391880.

Disclosures

Yes

Tables / Images

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