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Comment

Laxmaiah Manchikanti, MD, Mahendra Sanapati, MD, and Joshua Hirsch, MD | Pain Management Centers of America, Paducah, KY

Dhruva et al¹ in this important study of long-term outcomes in the use of opioids, other interventions and total costs of spinal cord stimulators compared with conventional medical therapy for chronic pain demonstrated lack of substantial difference in utilization for patients implanted with spinal cord stimulation (SCS). As stated in the editorial, Shirvalkar and Poree², the article lacks direct pain or functional measures - the primary outcomes.

For multifactorial reasons, SCS utilization has increased substantially over recent years.³ Manchikanti et al³ showed increase in spinal cord implants of 201%, with an annual increase of 13% per 100,000 fee-for-service (FFS) Medicare population in the United States. They also showed inflation-adjusted expenditures to increase over \$292 million in 2009 to \$1.1 billion in 2018, a 291% increase with a 16.4% annual increase.

It remains important to identify the reasons for lack of change in opioid utilization and similar utilization patterns of other interventional modalities. We believe that there are multiple issues in understanding the utilization treatment modalities after implantation of SCS.

First, it is clear that a large proportion of patients fail surgical interventions and a very small proportion undergo SCS.

Second, it is crucial to understand the medical necessity and selection criteria, which are based on strict local coverage determinations (LCDs) and medical policies in the United States. The selection criteria towards a major surgical intervention with implantables indicates failure of other modalities of treatments with significant deterioration in quality of life compared to those who chose to be in conventional medical therapy or were not qualified for SCS.

Third, the diagnostic codes show a single code utilized for failed back surgery syndrome (FBSS) irrespective of the area involved, ICD-961. The treatment modalities include procedures performed in the cervical spine, along with lumbar spine. This indicates the fact that a large proportion of patients in the FBSS and lumbar region also suffer with multiple other problems involving cervical and thoracic spine, osteoarthritis and extremity pain. Even though SCS may control pain in one region, it does not afford relief in other areas, leading these patients to undergo other interventions.

Fourth, as stated above, involvement of multiple regions will lead to treatment with opioids. Further, opioids are highly dependent and often it is impossible to wean these patients off opioids, as shown extensively in the literature.^{4,5}

1. Dhruva SS, Murillo J, Ameli O, et al. Long-term outcomes in use of opioids, nonpharmacologic pain interventions, and total costs of spinal cord stimulators compared with conventional medical therapy for chronic pain. *JAMA Neurol* 2022 Nov 28:e224166.
2. Shirvalkar P, Poree L. How SAFE is real-world use of spinal cord stimulation therapy for chronic pain? *JAMA Neurol*

2022 Nov 28 [Epub ahead of print].

3. Manchikanti L, Pampati V, Vangala BP, et al. Spinal cord stimulation trends of utilization and expenditures in fee-for-service (FFS) Medicare population from 2009 to 2018. Pain Physician 2021; 24(5):293-308.

4. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain--United States, 2016. MMWR Recomm Rep 2016; 65(1):1-49.

5. Dowell D, Ragan KR, Jones CM, Baldwin GT, Chou R. CDC clinical practice guideline for prescribing opioids for pain - United States, 2022. MMWR Recomm Rep 2022; 71(3):1-95.

CONFLICT OF INTEREST: None Reported

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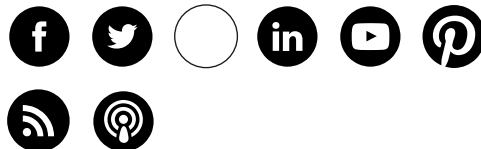
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