Journal of Pain Research

Dovepress
open access to scientific and medical research

Open Access Full Text Article

EDITORIAL

Knowledge Dissemination in Pain Medicine: Searching for Signal Within the Noise

Nasir Hussain[1,2], Michael E Schatman[3–5], Alaa Abd-Elsayed[6]

[1]Department of Anesthesiology, Beth Israel Deaconess Medical Center, Harvard, Boston, MA, USA; [2]Department of Anesthesiology, The Ohio State University, Wexner Medical Center, Columbus, OH, USA; [3]Department of Anesthesiology, Perioperative Care, and Pain Medicine, NYU Grossman School of Medicine, New York, NY, USA; [4]Department of Population Health - Division of Medical Ethics, NYU Grossman School of Medicine, New York, NY, USA; [5]School of Social Work, North Carolina State University, Raleigh, NC, USA; [6]Department of Anesthesiology and Pain Medicine, University of Wisconsin-Madison, Madison, WI, USA

Correspondence: Michael E Schatman, Department of Anesthesiology, Perioperative Care and Pain Medicine, NYU Grossman School of Medicine, New York, NY, USA, Email Michael.Schatman@NYULangone.org

Over the past decade, profound growth and innovation in the field of interventional pain medicine has led to a multitude of chronic pain treatment options for patients. While the use of traditional single shot injections is common practice amongst all pain physicians, several minimally invasive therapeutic options are becoming mainstream as a result of meaningful real-world evidence regarding their use and the dissemination of such using conventional and social media platforms. Dorsal root ganglion stimulation,[1,2] minimally invasive lumbar decompression,[3] peripheral nerve stimulation,[4,5] minimally invasive sacroiliac joint fusion,[6,7] and interspinous spacers[8] are a select few of many innovative minimally invasive options with growing evidence-bases for effectiveness and safety. The father of the group, spinal cord stimulation, which has perhaps the most robust evidence for effectiveness and safety, has also gained additional traction with new modes of stimulation, smaller generator sizes, and an expansion of US Food and Drug Administration (FDA) approved indications.[9]

Yet, some patients remain skeptical regarding the safety and efficacy of minimally invasive procedures for pain management. While certainly understandable given that some of these therapies are still in the infant stages of building robust, high-quality evidence, it is undeniable that positive outcomes have been reported in the empirical literature. Skeptics' primary concern, where traditional evidence on effectiveness continues to lag behind, pertains to safety. The need for more confidence in these procedures is fueled by both physicians and patients, who expectedly desire and certainly deserve evidence of procedural safety. Even the most well-conducted randomized controlled trials are limited by sample size, which can often be too small to truly evaluate incidences of rare adverse events or procedural complications. Fortunately, "big-data" evidence is beginning to emerge. For instance, one of the larger retrospective database analyses conducted by Hussain et al[10] of over 70,000 spinal cord stimulator patients evaluated the complication of spinal cord injury. The incidence of this feared complication was observed to be rare, occurring in fewer than 0.5% of study patients. Further, key associated factors were identified that, if optimized, could even further reduce the incidence of spinal cord injury. Reassuring safety data has also been published by several other investigators using robust databases with large samples of patients.[11–14] With spinal cord stimulation being a commonly considered minimally invasive pain therapy, the majority of the large-scale safety evidence to date has focused on better understanding its safety, yet clearly there is a need for similar evidence supporting other minimally invasive options as well.

Between physicians and allied healthcare professionals, healthy debate on safety evidence and measures that can be taken to promote safe practice is routine. Unfortunately, however, even with recent safety evidence for spinal cord stimulation, there continues to be misperception amongst some physicians, and as a result, some patients, on the safety of this procedure. While certainly not the norm, the uncommon sentiment regarding safety has been compounded by social media, where falsities can be spread by either non-experts or those with limited experience with spinal cord stimulation.[15] Expectedly, this leads to the spread of misinformation to the general public, and ultimately a profound reluctancy in patients for evidence-guided therapies that may ameliorate their suffering.

Received: 25 April 2022
Accepted: 24 May 2022
Published: 26 May 2022

In this era of social media becoming a potentially valuable source of information for both patients and physicians, it is imperative that guidelines are used that assist with the appraisal of healthcare information posted on all social media platforms.[16,17] The use of such tools can help promote the dissemination of high-quality information based on evidence-based and peer-reviewed practices. For instance, spinal cord stimulation is only one of many therapies available to patients with chronic pain conditions and the safety of the procedure continues to be established with sound, high-quality evidence.[10,11,13,14] Certainly, it is our hope that evidence continues to build for other therapies as well. We encourage physicians and researchers to continue to discuss and debate the safety of spinal cord stimulation, amongst other therapies, using the principles of evidence-based medicine. The field of interventional pain continues to evolve, and with that it is our hope that high-quality evidence on both safety and therapeutic effectiveness will provide important insights to patients who seek minimally invasive options to treat their chronic pain conditions.

Funding

No funding was received for this work.

Disclosure

Dr Michael E Schatman is a research consultant for Modoscript, outside the submitted work. The authors report no other conflicts of interest in this work.

References

1. Vuka I, Marciuš T, Došenović S, et al. Neuromodulation with electrical field stimulation of dorsal root ganglion in various pain syndromes: a systematic review with focus on participant selection. *J Pain Res*. 2019;12:803–830. doi:10.2147/JPR.S168814
2. Hagedorn JM, McArdle I, D'Souza RS, Yadav A, Engle AM, Deer TR. Effect of patient characteristics on clinical outcomes more than 12 months following dorsal root ganglion stimulation implantation: a retrospective review. *Neuromodulation*. 2021;24(4):695–699. doi:10.1111/ner.13326
3. Jain S, Deer T, Sayed D, et al. Minimally invasive lumbar decompression: a review of indications, techniques, efficacy and safety. *Pain Manag*. 2020;10:331–348. doi:10.2217/pmt-2020-0037
4. Zhou S, Hussain N, Abd-Elsayed A, et al. Peripheral nerve stimulation for treatment of headaches: an evidence-based review. *Biomedicines*. 2021;9(11):1588. doi:10.3390/biomedicines9111588
5. Xu J, Sun Z, Wu J, et al. Peripheral nerve stimulation in pain management: a systematic review. *Pain Physician*. 2021;24:E131–E152.
6. Lee DW, Patterson DG, Sayed D. Review of current evidence for minimally invasive posterior sacroiliac joint fusion. *Int J Spine Surg*. 2021;15:514–524. doi:10.14444/8073
7. Sayed D, Balter K, Pyles S, Lam CM. A multicenter retrospective analysis of the long-term efficacy and safety of a novel posterior sacroiliac fusion device. *J Pain Res*. 2021;14:3251–3258. doi:10.2147/JPR.S326827
8. Falowski SM, Mangal V, Pope J, et al. Multicenter retrospective review of safety and efficacy of a novel minimally invasive lumbar interspinous fusion device. *J Pain Res*. 2021;14:1525–1531. doi:10.2147/JPR.S304957
9. Podgorski Iii E, Mascaro P, Patin D. Comparison of FDA-approved electrical neuromodulation techniques for focal neuropathic pain: a narrative review of DRG, hf10, and burst neuromodulation. *Pain Physician*. 2021;24:E407–E423.
10. Hussain N, Gill J, Speer J, et al. Evaluating the incidence of spinal cord injury after spinal cord stimulator implant: an updated retrospective review. *Reg Anesth Pain Med*. 2022;47(7):401–407. doi:10.1136/rapm-2021-103307
11. D'Souza RS, Olatoye OO, Butler CS, Barman RA, Ashmore ZM, Hagedorn JM. Adverse events associated with 10-kHz dorsal column spinal cord stimulation: a five-year analysis of the manufacturer and user facility device experience (MAUDE) database. *Clin J Pain*. 2022;38(5):320–327. doi:10.1097/AJP.0000000000001026
12. Sivanesan E, Bicket MC, Cohen SP. Retrospective analysis of complications associated with dorsal root ganglion stimulation for pain relief in the FDA MAUDE database. *Reg Anesth Pain Med*. 2019;44(1):100–106. doi:10.1136/rapm-2018-000007
13. Labaran L, Jain N, Puvanesarajah V, Jain A, Buchholz AL, Hassanzadeh H. A retrospective database review of the indications, complications, and incidence of subsequent spine surgery in 12,297 spinal cord stimulator patients. *Neuromodulation*. 2020;23(5):634–638. doi:10.1111/ner.12952
14. Falowski SM, Provenzano DA, Xia Y, Doth AH. Spinal cord stimulation infection rate and risk factors: results from a United States payer database. *Neuromodulation*. 2019;22(2):179–189. doi:10.1111/ner.12843
15. Schatman ME, Petersen EA, Sayed D. No zero sum in opioids for chronic pain: neurostimulation and the goal of opioid sparing, not opioid eradication. *J Pain Res*. 2021;14:1809–1812. doi:10.2147/JPR.S323661
16. D'Souza RS, Daraz L, Hooten WM, Guyatt G, Murad MH. Users' guides to the medical literature series on social media (part 1): how to interpret healthcare information available on platforms. *BMJ Evid Based Med*. 2022;27:11–14. doi:10.1136/bmjebm-2021-111817
17. D'Souza RS, Daraz L, Hooten WM, Guyatt G, Murad MH. Users' guides to the medical literature series on social media (part 2): how to appraise studies using data from platforms. *BMJ Evid Based Med*. 2022;27:15–20. doi:10.1136/bmjebm-2021-111850