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Opioid Prescriptions in a Veteran Population Undergoing Lumbar Spine Surgery: What Are the Current Knowledge Gaps?

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Editorial

Opioid prescriptions in a veteran population undergoing lumbar spine surgery: what are the current knowledge gaps?

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We applaud the authors for their unique investigation entitled "Lumbar spine surgery reduces postoperative opioid use in the veteran population" (1). The manuscript provides sound data on a timely topic given the current opioid epidemic. This topic is especially prudent given that the veteran population is highly vulnerable yet under-researched. No previous studies have investigated opioid use within the veteran population related to lumbar spine surgery, which is remarkable given the burden of mental health disorders within this population that is often correlated with substance use. The current study affirms veterans as a high-risk population, with preoperative opioid exposure resulting in a nearly 3-fold increase in chronic opioid use postoperatively. However, lumbar spine surgery is an effective intervention aiding in veteran opioid use cessation, with 30.6% of patients in the high preoperative opioid group and 73.1% of patients in the low preoperative opioid group able to completely stop using opioids postoperatively. Ongoing studies relating to opioid use are essential for our profession to better understand the effects of surgery, as well as preoperative and postoperative opioid prescriptions, on the likelihood of opioid dependence after spine surgery.

This publication succeeds in many facets. Aside from its novel investigation of the veteran population, the large cohort provides adequate power demonstrating statistical significance in determining if lumbar spine surgery reduces the likelihood of long-term opioid use in patients requiring a lumbar decompression. Additionally, the authors took into consideration relevant factors and comorbidities associated with postoperative opioid use including body mass index (BMI), smoking status, history of depression, anxiety, posttraumatic stress disorder (PTSD), and substance use disorders (2). A 2022 meta-analysis highlighted preoperative opioid as having the greatest odds ratio 6.49 [95% confidence interval (CI): 5.09–8.28] for prolonged postoperative opioid use, which lends additional credence to the data obtained by Rezaii *et al.* (3). Moreover, surgeries in the current study were evaluated by invasiveness partitioning the data by simple decompressions and decompressions with fusion, number of levels operated, and the patient's length of stay. In spite of their multiple associated risk factors and comorbidities, lumbar surgery is as efficacious in the veteran population as it is in the non-veteran populations in regards of postoperative opioid use cessation. Lastly, in order to provide better perspective, the authors also assessed trends in lumbar surgery utilization and opioid usage among veterans. The authors

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demonstrated decreases in preoperative and postoperative opioid use over the last decade, and discuss potential reasons for the decline in opioid use including the United States Veterans Affairs guidelines for opioid prescribing practices, which has helped decreased opioid use by 64% over an eight-year time period (4,5).

Lumbar spine surgery studies reporting prevalence and risk factors for chronic postoperative opioid use (defined as any claim after 3 months of surgery) are rightfully receiving more attention as the opioid epidemic continues to have a devastating impact in the United States. In 2017, the opioid crisis was deemed a national health emergency; however, even before this executive order was placed, opioid prescription trends found that opioid prescriptions have decreased every year between 2011 and 2020 (6). A large portion of the challenge in successfully ceasing opioid use postoperatively lies in the high rate and quantity of preoperative opioid prescriptions. A systematic review concluded the prevalence of continued postoperative opioid use following spine surgery was 70% (95% CI: 55–81%) in patients who used opioids preoperatively and 30% (95% CI: 5–77%) for opioid naïve patients (7). These results are similar to the ones found for the >3-claims group and zero-claims group in the current study as 69.4% of patients in the >3 claims group were still using opioids at one-year compared to 10% in the opioid-naïve group. However, a notable limitation is present in this data. Given that there have been numerous attempts at curbing opioid cessation, and opioid prescriptions having been declining on a yearly basis, it becomes difficult to elucidate if measures external to surgery were a primary driving force in the number of opioids prescribed during the authors study period (January 1, 2010 to December 31, 2020).

A further limitation of the study is the lack of separate analysis of lumbar decompression and lumbar fusion patients. A previous meta-analysis found lumbar fusion patients have a significantly higher chronic postoperative opioid use prevalence (76%), versus non-fusion lumbar surgical procedures (53%) (7). We are unable to compare this finding to the present study since fusion, laminectomy, and discectomy were aggregated in the authors analysis. Even so, the emphasis of this study rightfully targets potential avenues to mitigate opioid use in a particularly vulnerable population and emphasizes the benefits of surgical intervention to reduce opioid use.

Another notable limitation of this study is its inability to determine postoperative patient outcomes due to its design, which utilized the Veterans Affairs Informatics and Computing Infrastructure (VINCI) database. Although the authors assessed complication rates following lumbar decompression after stratifying patients into preoperative opioid-naïve, 1–3 opioid claims, and >3 opioid claim groups, this may not be an adequate proxy to determining the overall success of the surgery when accounting for preoperative opioid use. While the authors found that complication rates and the incidence of urinary tract infections were greater in patients receiving a greater number of preoperative opioid claims, it is unclear if patients within the greater opioid claims groups also had higher revision rates or worse patient reported outcomes. While it is expected that preoperative opioid use would lead to worse improvements in pain, continued disability, and less improvement in overall quality of life, as has been reported in the civilian population, this data is still unknown in the veteran population and may serve as an interesting avenue for future research (8).

Overall, we would like to congratulate the authors on a well-performed study, which supplements the existing literature on the harmful effects of opioids. Further, this study provides data that surgery may be an effective intervention (in appropriately selected patients) to reduce opioid utilization in acute and chronic opioid users.

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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