

Effects of Lumbar Spine Surgery on Opioid Usage in the Veteran Population: A Retrospective National Database Study

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INTRODUCTION: The United States (U.S.) has been facing a worsening opioid epidemic over the past two decades. The veteran population represents a large and vulnerable group with a higher burden of mental health comorbidities. The purpose of this study was to analyze the impact of lumbar spine surgery on postoperative opioid usage in the U.S. veteran population.

METHODS: A retrospective cohort study was conducted using the Veterans Affairs Informatics and Computing Infrastructure (VINCI) database. Patients who underwent lumbar spine surgery were identified and then stratified into three groups based on preoperative opioid usage within the 365 days prior to the procedure: (1) opioid-naïve (zero claims), (2) low usage (one to three claims), and (3) high usage (four or more claims). Postoperative cumulative morphine milligram equivalents (MME) were tracked for each group and the paired Wilcoxon signed rank test was used to compare cumulative preoperative MME (days -365-0) to cumulative postoperative MME (days 91-455).

RESULTS: At one year, 30.6% of patients in the high preoperative opioid cohort and 73.1% of patients in the low preoperative opioid cohort were no longer using opioids. In the opioid naïve cohort, 10.0% of patients were still using opioids at one year. Among all patients, median cumulative postoperative MME was significantly less than median cumulative preoperative MME ($p < 0.001$). High preoperative opioid usage of more than 3 claims was most significantly associated with continued postoperative opioid usage (Odds Ratio 12.55, 95% CI 11.5 – 13.7, $p < 0.001$). From 2010 to 2020 the proportion of patients with preoperative opioid claims decreased from 58.8% to 34.8%. Median cumulative preoperative MME was also significantly higher between the years 2010 and 2015 compared to that of years 2016 to 2020 ($p < 0.001$).

DISCUSSION AND CONCLUSION: In the veteran population, lumbar spine surgery was effective in getting 50% of patients who were on opioids preoperatively to discontinue opioids postoperatively. 10% of patients who were opioid naïve prior to a lumbar surgical procedure were still receiving opioids at one year post surgery. Even minimal exposure to opioids preoperatively resulted in a 2.69 times increase in risk of being on opioids at one year versus opioid naïve patients. This study affirms that despite being a high-risk population, the veteran population has a similar response to lumbar spine surgery as the general population in regards to opioid dependence.

