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Day-of-Surgery Gabapentinoids and Prolonged Opioid Use: A Retrospective Cohort Study of Medicare Patients Using Electronic Health Records

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Abstract

Background: While preoperative gabapentinoids are commonly used in surgical multimodal analgesia protocols, little is known regarding the effects this therapy has on prolonged postsurgical opioid use. In this observational study, we used data from a large integrated health care system to estimate the association between preoperative day-of-surgery gabapentinoids and the risk of prolonged postsurgical opioid use.

Methods: We identified adults age ≥ 65 years undergoing major therapeutic surgical procedures from a large integrated health care system from 2016 to 2019. Exposure to preoperative gabapentinoids on the day of surgery was measured using inpatient medication administration records, and the outcome of prolonged opioid use was measured using outpatient medication orders. We used stabilized inverse probability of treatment-weighted log-binomial regression to estimate risk ratios and 95% confidence intervals (CIs) of prolonged opioid use, comparing patients who received preoperative gabapentinoids to those who did not and adjusting for relevant clinical factors. The main analysis was conducted in the overall surgical population, and a secondary analysis was conducted among procedures where at least 30% of all patients received a preoperative gabapentinoid.

Results: Overall, 13,958 surgical patients met inclusion criteria, of whom 21.0% received preoperative gabapentinoids. The observed 90-day risk of prolonged opioid use following surgery was 0.91% (95% CI, 0.77-1.08). Preoperative gabapentinoid administration was not associated with a reduced risk of prolonged opioid use in the main analysis conducted in a broad surgical population (adjusted risk ratio [adjRR], 1.19 [95% CI, 0.67-2.12]) or in the secondary analysis conducted in patients undergoing colorectal resection, hip arthroplasty, knee arthroplasty, or hysterectomy (adjRR, 1.01 [95% CI, 0.30-3.33]).

Conclusions: In a large integrated health system, we did not find evidence that preoperative gabapentinoids were associated with reduced risk of prolonged opioid use in patients undergoing a broad range of surgeries.