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Postoperative Opioid Prescriptions Following Cesarean Delivery: A Comparative Analysis of General vs. Epidural Anesthesia

Abstract:

Background: Cesarean delivery (C-section) is the most commonly performed surgical procedure in the United States and a known contributor to initial opioid exposure among women of reproductive age. While neuraxial (epidural) anesthesia is the preferred technique for cesarean delivery, general anesthesia is still used in select clinical scenarios. Given the ongoing opioid crisis, it is critical to understand how anesthesia modality influences postoperative opioid prescribing patterns.

Objective: To evaluate the association between anesthesia type (general vs. epidural) and postoperative opioid prescription rates in women aged 18 to 50 undergoing cesarean delivery, with follow-up extending to 90 days after surgery.

Methods: We conducted a retrospective cohort study using the TriNetX Global Collaborative Network, a federated health research platform of electronic medical records from 148 healthcare organizations. Women aged 18–50 who underwent cesarean delivery between 2005 and 2025 were included. Patients were grouped based on anesthesia type using CPT codes: general anesthesia (01961 only) and epidural anesthesia (01967 or 01968). The primary outcome was receipt of an opioid prescription (morphine, oxycodone, hydromorphone, naloxone, codeine, or tramadol) from day 1 to day 90 after surgery. Risk and survival analyses were conducted using TriNetX tools.

Results: A total of 166,774 patients were analyzed (80,394 general anesthesia; 86,380 epidural). Opioid prescriptions were more common in the general anesthesia group (78.0%) compared to the epidural group (67.3%), with a risk difference of 10.7% and an odds ratio of 1.725. Kaplan-Meier survival analysis showed a significantly lower probability of remaining opioid-free at 90 days in the general anesthesia group (21.7% vs. 32.4%, log-rank $p < 0.001$). The hazard ratio for opioid use was 1.279 (95% CI: 1.264–1.293).

Conclusions: Women receiving general anesthesia for cesarean section are more likely to receive opioids postoperatively and receive them earlier than those receiving epidural anesthesia. These findings underscore the importance of anesthesia choice in minimizing opioid exposure and guiding perioperative pain management strategies.