

Impact of Anesthesia Selection on Postoperative Pain Management in Operatively Treated Hip Fractures

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Purpose: Postoperative pain control for patients with hip fracture is challenged by desire to avoid opioids, minimize delirium, and prevent subsequent falls. We hypothesized that patients getting either local or regional anesthetic would have decreased opioid usage as compared to patients who received neither and that patients receiving local or regional anesthetic would have lower complications rates postoperatively. Finally, we sought to identify whether patient-related factors (fracture type, mechanism of injury, length of stay, patient age) contributed to differences in pain scores and use of opioid medications in the early postoperative period.

Methods: A retrospective review was conducted of patients surgically treated for AO/OTA 31A and 31B fractures at two Level I trauma centers. Outcome variables of receipt of any opioids at 24 and 48 hours, any complication (compartment syndrome, delirium, fall, infection, nonunion, hardware failure) as well as visual analog scale (VAS) pain scores (severe, moderate, mild / none) were analyzed. Univariate and multivariable logistic or multinomial logistic regression were conducted to determine if there was a relation between type of anesthesia administered, patient factors, and outcomes. Odds ratios (ORs) and adjusted odds ratios (aORs) were reported.

Results: Among the patient variables considered, sex, mechanism of injury, and AO/OTA fracture classification did not affect opioid administration at 24 or 48 hours. Use of regional anesthetic was associated with less opioid use in the first 24 hours compared to neither (aOR: 0.42, 95% confidence interval [CI]: 0.24-0.73). Patients with length of stay (LOS) of 10+ days had 3 times the odds of using opioids in both the first 24 hours (aOR: 3.21, 95% CI: 1.10-9.34) and 48 hours (aOR: 2.91, 95% CI: 1.35-6.25) compared to patients with shorter LOS. Patients receiving regional anesthesia were more likely to experience any complication (aOR 1.90, 95% CI: 1.10-3.30), the most common being delirium and postoperative falls. By postoperative day 2, patients who ≥ 65 years of age were less likely to report severe pain relative to mild / none (aOR: 0.16, 95% CI: 0.06-0.40).

Conclusion: This constellation of findings suggest that age may affect subjective pain scoring postoperatively and supports the use of regional anesthesia to decrease postoperative opioids in hip fracture patients. The increased complication rate in regional anesthetic patients is a subject of further study. Patients with LOS greater than 10 days had 3 times the odds of using opioids in the first 24 and 48 hours, further supporting attempts at minimizing opioid use in these patients.