Trauma Surgery & Acute Care Open

Navigating pain management in orthopedic trauma: the unintended consequences of combined analgesic regimens

Patrick B Murphy

To cite: Murphy PB. Navigating pain management in orthopedic trauma: the unintended consequences of combined analgesic regimens. *Trauma Surg Acute Care Open* 2024;**9**:e001537. doi:10.1136/tsaco-2024-001537

Effective management of acute pain after traumatic fracture is crucial for recovery. Insufficient pain control can lead to a cascade of negative outcomes, including increased physiological stress, psychological distress, and delayed mobility.[1 2] For many years, opioids have been the cornerstone of acute pain treatment after injury. However, widespread use of opioid therapy has contributed to the current opioid epidemic.[3]

Hart *et al* shed light on pain management after traumatic fractures through a retrospective cohort study using a large commercial database.[4] As healthcare providers strive to balance effective pain relief with patient safety, this study offers insights into the potential risks associated with combined analgesic regimens, specifically regimens including gabapentin.

The findings suggest that prescribing non-opioids alongside opioids may increase the risk of serious opioid-related events. This challenges the widely held belief that combining analgesics from different classes might allow for lower opioid doses and, consequently, reduced risks.[5] Instead, it appears that this approach may be associated with increased adverse events.

Several factors could contribute to this unexpected outcome. Patients receiving both opioid and non-opioid analgesics are at risk of polypharmacy and increased risk of unexpected medication interactions. The increased risk of serious opioid-related events is particularly pronounced in elderly patients and when gabapentin is used as the non-opioid analgesic.[6 7] The average age in the study was ~45 years of age and an age-adjusted analysis may further explain this risk. Additionally, non-opioid analgesics might alleviate some of the early warning signs of opioid toxicity, leading to continued use despite development of adverse events.

The study's findings are constrained by two primary limitations. First, there is a notable absence of data regarding inpatient analgesic use, a limitation of the dataset used. The interplay between inpatient and outpatient pain management strategies is intricate, with practices varying considerably across healthcare settings.[8] This variability makes it challenging to draw comprehensive conclusions about the full spectrum of analgesic exposure, patient expectations, and analgesia needs. Second, the study's primary outcome measure is a composite of events with differing levels of severity. While this approach allows for a broader assessment of opioid-related risks, it potentially obscures the nuanced understanding of specific risk factors associated with individual adverse events. This limitation hinders a more detailed analysis of the relative risks and benefits of various analgesic regimens.

Overall, the study's findings underscore the complexity of pain management and the need for a nuanced, individualize approach to analgesia prescribing practices. While opioids and non-opioids remain a valuable tool in managing acute pain from fractures, their use must be carefully considered and monitored. The study highlights the importance of thorough patient education regarding the risks associated with opioid use, even when combined with seemingly benign non-opioid analgesics.

Clinicians should increasingly consider alternative pain management strategies, such as staggered administration of different analgesics or prioritizing non-pharmacological interventions. While the goal of minimizing opioid-related risks is laudable, this study reveals that well-intentioned strategies may have unintended consequences. As we move forward, a balanced approach that considers both the benefits and risks of various analgesic regimens is crucial.

Contributors PBM wrote the article.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Commissioned; internally peer reviewed.

ORCID iD
Patrick B Murphy http://orcid.org/0000-0002-6086-8966

REFERENCES

1 Joshi GP, Ogunnaike BO. Consequences of inadequate postoperative pain relief and chronic persistent postoperative pain. *Anesthesiol Clin North Am* 2005;23:21–36.
2 Apfelbaum JL, Chen C, Mehta SS, Gan TJ. Postoperative pain experience: results from a national survey suggest postoperative pain continues to be undermanaged. *Anesth Analg* 2003;97:534–40.

► http://dx.doi.org/10.1136/tsaco-2024-001364

Division of Trauma and Acute Care Surgery, Department of Surgery, Medical College of Wisconsin, Milwaukee, Wisconsin, USA

Correspondence to
Dr Patrick B Murphy;
pbatesmurphy@gmail.com

3 von Oelreich E, Eriksson M, Brattström O, Sjölund K-F, Discacciati A, Larsson E, Oldner A. Risk factors and outcomes of chronic opioid use following trauma. *Br J Surg* 2020;107:413–21.
4 In press. Opioid and non-opioid analgesic regimens after fracture and risk of serious opioid related events, TSACO.
5 George S, Johns M. Review of nonopioid multimodal analgesia for surgical and trauma patients. *Am J Health Syst Pharm* 2020;77:2052–63.
6 Corriere MA, Daniel LL, Dickson AL, Nepal P, Hall K, Plummer WD, Dupont WD, Murray KT, Stein CM, Ray WA, *et al*. Concurrent Gabapentin and Opioid Use and Risk of Mortality in Medicare Recipients with Non-Cancer Pain. *Clin Pharmacol Ther* 2023;114:1050–7.
7 Khan NF, Bykov K, Glynn RJ, Barnett ML, Gagne JJ. Coprescription of Opioids With Other Medications and Risk of Opioid Overdose. *Clin Pharma Ther* 2021;110:1011–7.
8 Harvin JA, Truong VTT, Green CE, Allen L, Murry J, Radosevich JJ, Bogert JN, Murphy PB, Padilla-Jones BB, Zarzaur BL, *et al*. Opioid exposure after injury in United States trauma centers: a prospective, multicenter observational study. *J Trauma Acute Care Surg* 2020;88:816–24.