

Impact of Opioid-Free Anesthesia on Length of Stay in The PACU after Orthopedic Surgery An Integrative Review

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PRACTICE PROBLEM

- An estimated 115 Americans died each day from opioid overdose in 2016 (Lo-Cigancie et al., 2019).
- In 2019, 37.5% of opioids were prescribed from a healthcare provider resulting in devastating morbidity and mortality (McCance-Katz, 2020).
- Annually, the cost of abuse or misuse of opioid surpasses \$78.5 billion. That includes the cost of healthcare, opioid abuse treatment, lost productivity, and the criminal justice system (Lo-Cigancie et al., 2019).
- The U.S. consumed more prescription opioids than any other population worldwide, with an estimated 100% of Hydrocodone and 81% of Oxycodone (Salmond & Allread, 2018).
- 72% of prescription opioids went unused after surgery, contributing to the opioid epidemic and 63% of overdose cases (Salmond & Allread, 2019).
- Increased use of intraoperative opioids leads to higher postoperative analgesic requirements and potentially misused of opioids (Santonocito et al., 2018).

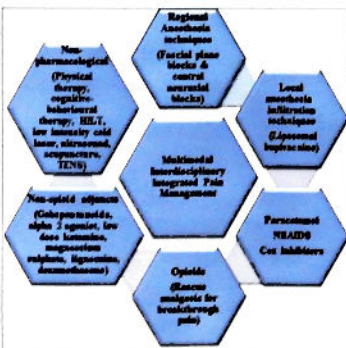
Project Aim: To search the literature to identify best practice to decrease the length of stay in the post anesthesia care unit (PACU) by minutes after orthopedic surgery using the opioid-free anesthesia (OFA) protocol.

CLINICAL QUESTION

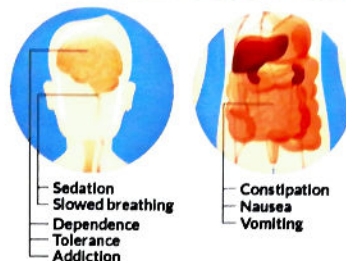
For adult inpatients with a history of opioid abuse having orthopedic surgery at a community hospital in Massachusetts, does the implementation of opioid-free anesthesia (OFA) as endorsed by AANA compared to current practice decrease the length of stay in PACU by minutes, in 8-10 weeks?

METHODOLOGY

- Search:** A systematic electronic library search using CINAHL, PubMed, Journalist (JVID), Proquest, and Uxolcume Library databases.
- Keywords:** Opioid-free anesthesia, opioid use disorder, post-anesthesia care unit length of stay, opioid crisis, multimodal anesthesia, regional anesthesia, opioid-based anesthesia.
- Inclusion criteria**
 - Studies published between 2016-2021
 - Written in English
 - Full text & peer-reviewed
 - OFA intraoperatively
 - Comparison of OFA and opioid-based anesthesia
 - Adult patients
 - Opioid use disorder
- Exclusion criteria**
 - Pediatric patients
 - Non OFA and OFA
 - Studies published before 2016
 - Unpublished manuscripts
- 453 articles were returned. Ultimately 438 were excluded.
- The 15 final chosen articles were reviewed to support the evidence-based practice change.
- Literature was read, analyzed and synthesized.
- All data were put in John Hopkin's Individual Evidence Summary Tool and Summary of Systemic Reviews Table.
- The synthesis of each study produced themes: Post-Operative Nausea Vomiting, Opioid prescription, pain score, length of stay, and patient satisfaction



RESULTS



Finding synthesis of the 15 articles involved a thematic analysis and resulted in the following themes:

- Postoperative Nausea and Vomiting (PONV)**
 - Common unpleasant complaint after surgery (Frauenknecht et al. 2019, Ahmed et al. 2020).
 - 37.5% of patients that received opioid intraoperatively experienced PONV compared to 7.5% in the OFA group (Bhardwaj et al., 2019).
- Opioid Prescription**
 - 42-71% of prescriptions go unused and illegal
 - Opioids remain the mainstay after surgery.
- Pain Score**
 - No difference in pain scores for OFA and OFA.
 - OFA presents more side effects for patients (Basto & Machado 2020).
 - OFA group has received more pain medication postoperatively.
- Length of Stay**
 - Less time in PACU from OFA based on less side effects.
 - Elimination of opioid side effects to decrease the length of stay.
 - Increase length of stay is less cost effective.
 - Management of opioid side costs less for healthcare systems.
- Patient Satisfaction**
 - Patients reported a better recovery and satisfaction with OFA.
 - The use of OFA was beneficial to patients

IMPLICATIONS

- The OFA is a multimodal anesthesia intervention to minimize opioid administration during surgery, increase patient outcomes, and decrease the length of stay.
- The multimodal anesthesia components are considered based on (a) potential side effects, (b) intrinsic analgesic potency, and (c) opioid-sparing potential (Hu et al., 2019).
- The OFA protocol includes the use of acetaminophen, nonsteroidal anti-inflammatory drugs or cyclooxygenase 2-specific inhibitors, local and regional analgesia, steroids, gabapentinoids, lidocaine, ketamine, dexmedetomidine, magnesium, and beta-blockers (Shaathanna et al., 2021)
- CRNAs are a crucial part of the surgical team to make patients comfortable. Their role in combating the opioid epidemic is committed to taking action. These actions are evidence-based pathways and patient-centered.

CONCLUSION

OFA is an evidence-based practice intervention that has been proven in reducing opioids used after surgery which serves to reduce incidence and costs associated with postoperative nausea and vomiting (PONV), expedite PACU recovery, decrease systemic effects, preserve respiratory status, and benefit chronic pain and opiate-dependent patients on pharmacologic therapies. CRNAs are experts in pain management to implement OFA to deliver quality and cost-effective anesthesia care.

REFERENCES

Benoit, P., & Marchand, D. (2016). Effect of opioid-free anesthesia on postoperative pain: A systematic literature review. *Journal of Anesthesia and Analgesia*, 26(2), 101-110.

Chen, S., Liu, Y., & Peng, C. (2019). The impact of multimodal analgesia on postoperative pain management: A systematic review and meta-analysis. *Journal of Anesthesia and Analgesia*, 29(1), 1-10.

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