

Reducing Opioid Exposure Following Common Ambulatory Hand Surgery, a Systematic Review

Mason J. Horne DPT¹, Vasanth S. Kotamarti MD¹, Ashit Patel M.B.Ch.B.²

¹Albany Medical Center, Albany, NY

²Duke University Medical Center, Durham, NC

Introduction

- The opioid epidemic is a health crisis in the United States and physicians contribute by overprescribing opioids
- Ambulatory hand surgery is common in the US and associated with opioid over-prescription
- There is a lack of guidance for safe and effective analgesia following ambulatory hand procedures
- Current literature was assessed to suggest evidence-based protocols for postoperative analgesia and opioid reduction strategies

Methods

- A systematic review was performed using PubMed, Web of Science, and Cochrane Library
- Identification of studies comparing nonopioid to opioid treatments for pain management following ambulatory hand surgery
- Identification of studies investigating opioid sparing strategies after ambulatory hand surgery
- Evidence was examined toand provide determine efficacy of nonopioid interventions recommendations for optimal non-opioid protocols and opioid sparing strategies

Key Search Phrase

((("Opioid" OR "Pain Management" OR “non-opioid” OR “nonopioid”) AND ("carpal tunnel release" OR "trigger finger release" OR "tenosynovectomy" OR "fasciectomy" OR "Hand Surgery")))

Identification

Articles identified through search: PubMed (n=330); Web of Science (n=85); Cochrane (n=95)
N=510

Screening

Articles after duplicates removed (n=410)

Articles removed because they did not address hand surgery or pain management (n=365)

Eligibility

Article abstracts assessed for exclusion criteria (n=43)

Removed for comparing anesthesia intervention or surgical intervention (n=5)
Review (n=5)
Did not compare non-opioid vs opioid groups or did not fit opioid sparing criteria (n=10)
Included other surgeries besides ambulatory hand or wrist (n=3)
Not English (n=1)
Study was not completed (n=1)

Inclusion

Full Articles Assessed (n=18)

Articles included in study (n=18)

Results

Factor	LOE	Recommendation
Pain management	I&II	Combination of ibuprofen 375mg-600mg and acetaminophen 500mg-975mg directed to be taken as needed for pain following medication specific guidelines for dose schedule following CTR, TFR, dQR, or SME.
Pain management if unable to take NSAIDs	II	10 doses of 500mg acetaminophen every 6 hours as needed is adequate for pain following CTR or TFR
Pain management if unable to take acetaminophen	II	10 doses of 600mg ibuprofen every 6 hours as needed is adequate for pain following CTR or TFR
Patient education if opioids are prescribed	II	Preoperative education should be provided to decrease postoperative opioid use. Education focused on non-opioid interventions (icing, elevation, NSAIDs, Acetaminophen, rest). Education should be provided on adverse effects and risks associated with opioids. This information should also be provided as a printout and distributed postoperatively.

CTR – Carpal Tunnel Release, TFR – Trigger Finger Release, dQR – De Quervain Release, SME – Simple Mass Excision

Discussion

- No evidence reported superior pain relief with opioids compared to nonopioids
- Multiple studies reported superior pain relief with non-opioids compared to opioids
- Multiple studies reported more adverse effects with opioid use compared to nonopioids
- No studies reported higher patient satisfaction with pain management with opioids compared to non-opioids
- Multiple studies reported improved functional outcome scores with nonopioid use compared to opioids
- Preoperative opioid education with postoperative hand out lead to reduced opioid consumption following ambulatory hand surgery

Conclusion

- Nonopioid interventions are adequate in multiple aspects of pain management compared to opioids for common ambulatory hand procedures
- Recommendations were established for 2 nonopioid treatment protocols, and for an opioid sparing intervention (level I and II evidence)
- Evidence provided in this review should be strongly considered for pain management guidance following ambulatory hand surgery and provides a means to decrease opioid overprescribing in the US

Limitations/Future Studies

- The majority of RCTs in this review excluded patients who were chronically using opioids or that used opioids within a period before surgery
- Future RCTs should include patients who use opioids for chronic pain management