

OPIOID SPARING-HOW DARING: Opioid Naive Patients Undergoing Knee Or Hip Replacement Surgery Receive Minimal Opioids

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Problem

Patients undergoing unilateral knee/hip arthroplastic surgeries receive opioids for pain control contributing to opioid related adverse drug (ORADE) which are directly related to increasing chances of opioid addiction, misuse, as well as increased length of stay in acute care settings.

Evidence (Review of Literature)

- Use of opioids increases ORADE and contributes to possibility of abuse and/or addiction to opioids and patients taking opioids develop tolerances and can make future pain control more difficult
- Several studies reviewed the multimodal regimens and had positive results regarding adequate pain control and no significant increase in adverse post-operative events
- Pain control is a complex multifaceted problem and more evidence is needed for multimodal approaches including use of opioid sparing protocols
- Two or more drug combinations of Acetaminophen, gabapentin, pregabalin, ketamine, NSAIDs, and/or cyclooxygenase 2 have not been adequately studied to determine efficacy
- Limiting opioids should decrease ORADEs such as respiratory depression, Post-Operative Nausea-Vomiting (PONV), sedation, sleep disturbances and urinary retention
- Use of gabapentin, and/or pregabalin pre-operatively increases length of stay in the PACU
- The protocols for pain control opioid and opioid sparing regimens use and efficacy seems to be quite different for different surgeries on different parts of body

American Society of Perianesthesia Nurses. 2017-2018 Perianesthesia Nursing Standards Practice Recommendations and Interpretive Statements. Cherry Hill, NJ: American Society of Perianesthesia Nurses.

Donabue, R. S., Bradbury, G. R., Zychowicz, V. C., & Muckler, V. C. (2018). Multimodal perioperative analgesia regimen to improve patient outcomes after total knee arthroplasty: A multidisciplinary quality improvement project. *Journal of Perianesthesia Nursing*, 138-152.

Gan, T. J. (2017). Surgery's Role in Slowing the Opioid Epidemic. *Outpatient Surgery*.

Objectives

- Implement an opioid sparing management regimen
- Decrease ORADE
- Decrease length of stay in hospital
- Decrease time in the PACU

Implications for PACU

- Nurses in PACU can promote implementation of regimens for pain control that have less opioid medications, decrease pain better and minimize ORADE.
- Perianesthesia nurses can be instrumental in gathering evidence regarding other methods that work for pain control and decrease in adverse post-op side effects such as:
 - PONV
 - Sedation
 - Respiratory depression
 - Pulmonary dysfunction
- Perianesthesia teams can develop protocols that use pain control methods other than medications to control or limit post-op side effects and promote a more pleasant experience for the patient and family
- Decreasing time in the PACU because of decreased side-effects and better pain control should lead to better outcomes for the patient's overall experience of surgery and recovery.



Results

- Successful implementation of protocol. Implementation of the opioid sparing regimen was successful. Patients were less sedated, able to ambulate, and did not need the opioids. The floor nurses, and physical therapists were amazed at how well the regimen was working.
- Team work improvement. The therapists, nurses in all units, anesthesiologists, and orthopedists worked together well and patients seemed more pleased with success.
- LOS significantly decreased in the patients who were treated with the opioid sparing protocol versus the opioid protocol. Nearly half a day decrease from 2.45 to 2.053 days in hospital.
- Decrease ORADE and length of time in PACU not quantified.

Year	N	Mean	StDev	SE Mean
17	207	2.45	1.06	0.075
18	178	2.053	.557	0.042

95% CI for difference: (0.2224, 0.5698)
T-test of difference = 0 (vs ≠): t-value = 4.48
P-value= 0.0000 DF = 383
Both used pooled StDev = 0.8643

Conclusions

- Continue to use the opioid sparing protocol
- Expand the implementation to other types of surgical patients
- Teamwork success can be example for promotion of the protocol
- Great success in decreasing LOS
- Measuring and documenting of parameters for ORADE, length of time in PACU were not clearly planned and can be focus of next phase