AAOS
American Academy of Orthopaedic Surgeons

Impactful Statements

Pharmacologic, Physical, and Cognitive Pain Alleviation for Musculoskeletal Extremity/ Pelvis Surgery

An impactful recommendation is one that offers the potential for current evidence to change care offered to patients. This influence can be due to one or more of the following:

- Evidence highlighting current variations in care that were previously unsupported by evidence.
- Current evidence supporting a significant difference or change from current clinical practice or previously held "gold standard" care.

The following impactful statements are based on the Pharmacologic, Physical, and Cognitive Pain Alleviation for Musculoskeletal Extremity/ Pelvis Surgery Clinical Practice Guideline:

1. Neuromuscular electrical stimulation (NMES) should be used to improve function after musculoskeletal surgery.
2. Massage should be used in combination with standard therapy to improve pain.
3. Either regional anesthesia or local anesthesia should be used for total hip or knee arthroplasty.
4. Continuous regional anesthesia should be used to improve pain and reduce opioid use for total shoulder arthroplasty.
5. Cyclooxygenase-2 (COX-2) inhibitors should be used to improve pain, decrease opioid consumption and improve function.
6. Oral acetaminophen should be used to improve patient pain and decrease opioid use.
7. Gabapentin should not be used to improve pain or opioid consumption in either single or multi-dose regimens in the perioperative period.
8. Pregabalin may be used to improve pain and decrease opioid consumption.
9. Intravenous ketamine should be used in the perioperative window to reduce opioid consumption after total hip and knee arthroplasty.

The following guideline recommendations are the basis of the impactful statements:

1. Neuromuscular electrical stimulation should be used with standard treatment to improve function, but no significant difference is seen in pain.
2. Massage may be used with standard treatment for improved pain outcomes.
3. Moderate evidence supports no difference in patient outcomes between local and regional anesthesia for patients undergoing total knee and hip arthroplasty.
4. Strong evidence supports the use of continuous regional anesthesia over local anesthesia in total shoulder arthroplasty to reduce pain and opioid use in the first 24 hours after surgery.

5. Cox-2 agents should be used to limit patient opioid consumption, improve pain and function; however, there is no difference in adverse events.
6. a. Acetaminophen should be used to improve patient pain and decrease opioid use.
   b. There is no difference in pain intensity and opioid use between oral acetaminophen and intravenous acetaminophen.
7. a. There is no significant difference in patient outcomes between multi-dose gabapentin and placebo; however, additional concerns for adverse events such as sedation and respiratory depression should be recognized with use.
   b. There is no significant difference in patient outcomes between single-dose gabapentin and placebo; however, additional concerns for adverse events such as sedation and respiratory depression should be recognized with use.
8. Moderate evidence suggests single or multi-dose pregabalin could be used to improve patient pain and opioid consumption outcomes; however, additional concerns for adverse events such as dizziness and sedation should be recognized with its use.
9. Strong evidence supports the use of intravenous ketamine in the peri-operative period to reduce opioid use in the first 24 hours after hip and knee arthroplasty.