Pain Management for TKA and THA in 2016

David F. Dalury M.D.
Patient’s number 1 fear:

Pain.
Pain

• “Paena” Latin
• “Punishment from God”

• THA much less painful than TKA
• Principles and protocols the same
Acute pain due to:

- Mechanical, thermal and chemical damage leading to cellular damage
- This leads to release of various chemical and substance mediators (histamine, prostaglandins, bradykinins, etc)
- Multiple opportunities to intervene in pain pathway
Pain Control Post-Operatively

- Failure to control post-op pain can induce pathophysiologic responses:
  - Increased Post-Operative Morbidity
  - Delayed Rehabilitation
  - Increased Patient Anxiety
  - Decreased Overall Patient Satisfaction
  - Sleep Disturbance
We can do better

Regional Anesthesia
Mutimodal anesthesia
Preemptive anesthesia
Advantages of Regional Anesthetics

• Many studies show enhanced post-operative analgesia
• Lower neuro-endocrine response to surgical stress
• These blocks act earlier in the pain pathway: they may “block” the brain from ever seeing the pain.
  – They stop the pain from advancing above the spinal level
• Systemic analgesic drugs act on the brain receptors
• 528,495 patients undergoing primary TJR
• 11% neuraxial; 14% neuraxial/GA; 74% GA
• Age, comorbidities about the same
• Results: Neuraxial had lower:
  – 30 day mortality -fewer complications
  – Shorter length of stay -lower cost
• Most favorable complication risk profile
Multimodal Analgesia

• Concept a decade old
• Rationale: sufficient analgesia due to additive or synergistic effects of different drugs
• Allows reduction of dosage of drugs and fewer adverse effects
Current Protocol

- Multimodal approach
- COX 2 started 48 hours ahead of time
- Continuous Tylenol
- Pre-emptive narcotics
  - Short acting; avoid long acting
- Peri-capsular injections (the key)
Additions to Current Protocol

• Dexamethasone 4 mg Iv q 8 hours x 3
  – Can use Solucortef
  – Anti nausea, pain potentiator
  – Mood stabilizer
  – No increase in risk of infection
  – Avoid in Diabetics (?)

• Cryocuff regularly
Control Bleeding and Swelling

- Cryocuff regularly in all patients
  - Data is solid
- Tourniquet use much rarer
  - No difference in blood loss
  - Dennis et al 2015: less pain and earlier return of quad function without tourniquet
- Risk adjusted AC
  - Ecotrin for all except high risk patients
- TXA for all
TXA now an integral part of pain and rapid rehab protocol

Used in all patients
IV unless higher risk; topical
1 Gm at incision, 1Gm at closure
Preemptive Analgesia

• Concept is to “stay ahead of the pain”
• Easier to prevent pain than to treat pain
• Aim for intervention if pain > 4 on VAS scale
• Patients appreciate your concern about pain control
Current Multimodal Recipe

- Celebrex 200-400 mg 2 days before surgery and continued for 4 weeks
- Tylenol 1000mg TID
- Oxycodone 5 mg 1-2 tabs q 4 hours
- Toradol 30 mg IM/IV prn for 1 day
- Ultram 50-100 mg po q6 hours prn
- Neorontin 300 mg at HS. Can increase as needed
- Solucortef 100mg IV q8 for 24 hours
Goal of Medications

- Avoid parenteral narcotics
- Control nausea (Scopalamine patch, Emend, Zofran)
- Avoid dehydration
- Add anti anxiety if needed (Xanax)
- Address depression with PCP
- Add sleep aid if needed
Adjuncts to Multimodal Meds

- Two major current popular modalities:
  - Peripheral Nerve Blocks (PNB)
  - Local Infiltrative Analgesia (LIA)

- Both very effective and predictable pain relief
LIA Superior

• LIA superior due to:
  – Simpler Delivery
  – Quicker Mobility
  – Lower Cost

• Should be the standard
Pericapsular injection is the key

• Ropivicaine 0.5% 50cc mixed with .05% Epinephrine and 1 cc of Toradol 30 mg/cc Clonidine 80 mcg total of 100cc
  – Injected in 4 separate areas: posterior capsule, medial and lateral capsule (include periosteum) and in the incision.

• Pre-mixed by Pharmacy and delivered sterile to OR
• Ropivicaine longer acting local anesthetic with decreased motor block propensity
• Can use up to 5 mcg/kg before toxicity issues
• Clonidine an alpha adrenergic agonist and functions locally and centrally
• Epinephrine vasoconstriction increases concentration
• Toradol acts at local sites
Injection
What to Inject?

• Many different cocktails. Much opinion, little science
• Exparel an intriguing option
  – Available
  – Expensive (4x)
  – Data thus far non superior to other cocktails
Areas for Improvement with LIA

• Where to inject?
  – Perisoteum, regions?

• What to inject?
  – Many choices

• How to inject?
  – 22 G and control syringes

• All make a difference

• Information coming
Rapid Rehab Protocol

• Average LOS now 1.2 days to home
• Anyone finished by 1500 leaves next day
• No readmissions for pain
• Critical aspects of early discharge:
  – Excellent pain control
  – Education of entire system (Nurses, Anesthesiologists, Therapists etc)
  – Early ambulation (DOS for everyone)
  – Pre-op education of patient is key
Summary

• Great progress in last few years
• Patients expect it; we should deliver it
• Exciting information on the way
• All contribute to enhanced recovery after TKR and THR
Thank you