The future of NORA post-operative pain control: Non-opioid analgesics and regional blocks

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DISCLOSURE: Consultant Baxter International Inc.
Goals of Sedation/Analgesia for NORA

• Improve patient acceptance and cooperation
  – Anxiolysis, sedation, amnesia

• Minimize pain and discomfort
  – Uncomfortable procedures, deep structure traction
  – Need for multiple local anesthetic injections

• Facilitate proceduralist
  – Prevent patient movement

• Expedite discharge
  – Rapid recovery – clearheaded
Sedation/Analgesia Technique

• Sedative-hypnotics: midazolam, propofol
• Analgesia
  – Opioids
  – Analgesic adjuncts: ketamine, dexmedetomidine
  – Non-opioid analgesics: acetaminophen, NSAIDs
• Non-pharmacological: reassurance, music, virtual reality
Sedation/Analgesia Complications

- Patient dysphoria/movement
- Airway obstruction/respiratory depression/hypoxemia
- Cardiovascular: hypotension/dysrhythmias
- Regurgitation and aspiration
- Delayed discharge
Pain Control
Patient Education

• Set realistic goals and expectations
  – “Plan to reduce pain intensity to an acceptable level”

• Use simple non-opioids as primary analgesics
  – Combination of acetaminophen and NSAIDs
  – No difference in analgesic efficacy between non-selective NSAIDs and COX-2 specific inhibitors, at equipotent doses
  – COX-2 inhibitors lack of platelet inhibition, do not influence perioperative blood loss
  – Oral and IV formulations have similar analgesia

• Non-pharmacological approach
74 studies between 1987 and 2019 with 151,031 patients included

Wide of surgical procedures: ENT, breast, abdomen, plastics, etc.

Clinically significant bleeding = documented hematoma, need for a reoperation due to bleeding, and the need for a blood transfusion

NSAIDs are unlikely to be the cause of postoperative bleeding complications

Results are consistent across NSAID type and surgical procedures
NSAIDs: Unfounded Concerns

- Renal complications: Short duration of use does not appear to influence AKI in patients with normal renal function
- Cardiac complications: No conclusive evidence for increased risk of cardiovascular events after CABG surgery
  - Despite the block-boxed warning against NSAID use after CABG, certain NSAIDs such as naproxen may be relatively safe
- GI complications: not increased with short duration (~7 days)
- Bone reunion after fractures: lack good evidence
Dexamethasone

- Reduces pain and opioid requirements
- Excellent antiemetic
- Improves functionality
- No safety concerns
  - Delayed wound healing, infection
  - Hyperglycemia
Ketamine

• Reduces propofol and opioid requirements
• Adverse effects: hallucinations, nightmares
• Contraindications: poorly controlled CV disease, hepatic dysfunction, high intracranial and intraocular pressures, active psychosis, pregnancy
Dexmedetomidine: Not as Safe as You Think

• Dexmedetomidine has been promoted as having no respiratory effects
  - Similar upper airway collapsibility as propofol, regardless of level of sedation
  - Can cause upper airway obstruction
• Low-dose dexmedetomidine with propofol delayed discharge readiness after colonoscopy
• Dexmedetomidine increase hypotension
  - Hemodynamics monitoring after treatment cessation (i.e., PACU and beyond)
Regional Analgesic Techniques

• Provides excellent dynamic pain relief, important component of optimal multimodal analgesic therapy
• Pre-operative or rescue-after procedure
  - Surgical site local anesthetic infiltration
  - Peripheral nerve blocks
  - Interfascial plane blocks: superficial/deep torso surgery
  - Neuraxial blocks: role limited in the ERP era


Post-Procedure Analgesia

• Acetaminophen 1 gm, po, q 6 h

• NSAIDs
  – Ibuprofen 400-600 mg, q 6-8 h
  – Meloxicam 15 mg, po, daily
  – Celecoxib 200 mg, po, q 12 h

• Opioids
  – Oxycodone IR 5-10 mg, po, q 6 h, PRN
  – Tramadol 50 mg, po, q 6 h, PRN
Summary

• Optimal peri-procedure pain relief critical
• Educate patients regarding and analgesic options, set realistic expectations
• Emphasize use of non-opioids: acetaminophen and NSAIDs/COX-2 inhibitors, dexamethasone, local/regional analgesia techniques
• Consider non-pharmacologic approaches
• Limit the use of sedative-hypnotics, analgesic adjuncts, opioids
Questions?