Acute Pain in the Chronic Pain Patient for Ambulatory Surgery

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Learning Objectives

• To formulate a systematic approach to treating these patients
  • Preoperatively
  • Intraoperatively
  • Postoperatively

Perioperative goals

• Ambulatory
• Reasonable pain control
• Avoid withdrawal
• Safe doses
Challenges in Chronic Pain Patients

- **Prevalence**
  - 25.3 million adults suffer from daily/chronic pain
- **Definition**
  - Pain > 3 months or past the time of normal tissue healing
- **Fatalities**
  - 165,000 opioid pain medication overdose deaths over 15 years
  - 1 in 32 patients on opioid dosages > 200 morphine milligram equivalents died from overdose

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Challenges in Chronic Pain Patients

- **Multifactorial issues**
- Level of pain post-op and high opioid requirements


Opioid Effects

Location of Mu-Opioid Receptors
Acute Pain: short lived, predictable, responds well to opioids

Chronic pain: multifactorial, highly complex, pain scores do not respond in a predictable fashion to opioids

Ballantyne J et al. British Medical Journal, 2016, Jan 6; 352
Preoperative Considerations

- Identify chronic pain patients
- Gather information
  - Address patient concerns
  - Current dosages & Pharmacotherapy history
  - Planned procedure
The 5 E’s of Communication

- Engage
- Empathize
- Educate
- Enlist
- End

Preoperative

- Preoperative neurologic deficits
- Neuropathic pain
- Hypersensitivities
  - Allodynia (pain due to light touch)
  - Hyperalgesia (heightened response to pain)

Preoperative

- Multimodal analgesia
  - Acetaminophen 1000mg
  - COX-2 e.g. celecoxib 400mg
- Neuropathic pain risk:
  - Gabapentinoid
    - Gabapentin 600mg or Pregabalin 150mg

Preoperative Optimization

- Consider trigger points and massage
- Consider epidural steroid injection
Preoperative

- Anxiety
  - Benzodiazepine
  - Oral Clonidine

Preoperative considerations for the opioid-tolerant

- Opioid tolerance: 1mg/hr morphine IV for more than one month
- Risk of opioid-induced hyperalgesia
- Risk of respiratory depression

Preoperative considerations for the opioid-tolerant

- Discuss possibility of opioid rotation
- Possibility of preoperative opioid taper
- If not tapered, keep on USUAL regimen
- Transdermal fentanyl
- Methadone
Preoperative Considerations for neuropathic pain & fibromyalgia

- Gabapentinoids
- Tricyclic Antidepressants
- Serotonin Noradrenaline Reuptake Inhibitors (e.g. duloxetine)

Intraoperative Adjuvants

- **KETAMINE**
  - Mechanism: NMDA receptor antagonism
  - Uses:
    - opioid tolerance
    - neuropathic pain
    - fibromyalgia
    - risk of developing chronic post surgical pain

Intraoperative Adjuvants

- **KETAMINE**
  - Variable dosing:
    - 0.25-0.5 mg/kg bolus
    - 2-4 mcg/kg/min continuous infusion

Carroll et al. RAPM 2004, 576-591
Intraoperative adjuvants

- **MAGNESIUM**
  - Mechanism: NMDA receptor antagonist
  - Meta-analysis: morphine consumption decreased 24% in first 24 hours, decreased pain scores


- **DEXAMETHASONE**
  - anti-inflammatory
  - 8mg
  - decrease pain scores, increase time to first analgesic dose
  - hyperglycemia

  DeOliveria GS et al. Anesthesiology 2011 Sep;115(3):575-588

- **NSAIDS**
  - Mechanism: COX-2 inhibitors
  - Celecoxib
  - Ketorolac 30mg IV (if no NSAIDs or COX-2)
  - Side effects: risk of myocardial infarction, stroke

Intraoperative Adjuvants

- **CLONIDINE, DEXMEDETOMIDINE**
  - Alpha-2 agonists
    - decrease opioid consumption, decrease PONV
    - bradycardia
  
  Schnabel A et al. Pain 2013 Jul 154(7) 1140-9
  Turan A et al. Anesth Analg 2016 Sept 123(3) 748-757
  Jessen Lundorg L et al. Cochrane Database Syst Rev 2016 Feb 18

Intraoperative Adjuvants

- **GABAPENTINOIDS**
  - Mechanism: act on calcium channels in the spinal cord
  - Effective for neuropathic pain
  - Decrease pain scores, decrease opioid use

Schmidt PC et al. Anesthesiology 2013 Nov;119(5):1215-21

Intraoperative adjuvants

- **ACETAMINOPHEN**
  - 3-4 grams/day maximum dose
  - IV versus oral
Intraoperative Adjuvants

- METHADONE
  - Mechanism: NMDA receptor antagonist, serotonin and norepinephrine receptor inhibitor
  - Variable half-life, p450 metabolism
  - 2.5-5 mg bid-tid
  - Risk of prolonging QTc interval, torsades de points

AAHPM Palliative Care Primer, 2010

Intraoperative Adjuvants

- LIDOCAINE
  - Analgesic, antiinflammatory
  - 1.5-3mg/kg/hour
  - Role in ambulatory surgery


Intraoperative adjuvants

- Local infiltration by surgeon
Intraoperative Adjuvants

- Regional anesthesia
- Peripheral nerve catheters

Intraoperative Strategies

- Titrate opioids to respiratory rate in spontaneously ventilating patient
Special Patient Populations

Buprenorphine
- Mechanism: partial mu-agonist and K-agonist
- Ideally discontinue 48 hours before surgery
- If abruptly discontinued, risk of withdrawal
- Optimize use of nonopioid adjuvants
- If continued, titrate short-acting opioids, may need higher doses
- Could divide doses to optimize analgesic effects tid-qid

Alford D et al. Ann Intern Med. 2006, January 17;144(2) 127-34
Fiellin D et al. PCCS for Medication Assisted Treatment, 2014

Special Patient Populations

Naltrexone
- Mechanism: long-acting oral opioid antagonist
- Discontinue 24 hours before surgery
- If abruptly discontinued, selective up-regulation of mu-receptors=enhanced opioid sensitivity
- Optimize use of nonopioid adjuvants

Mitra S et al. Anesthesiology. 2004 Jul;101(1) 212-27

Persistent Postsurgical Pain Risk Factors

[Diagram showing preoperative, intraoperative and postoperative pain factors]
Perioperative Opioid

- Limit prescribed opioid to lowest effective dose for shortest effective duration without compromising effective analgesia


Perioperative Opioid

- "when opioids are used for acute pain, lowest effective dose of IR-opioids and prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. <3 days often sufficient, >7 days rare"

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Reality

Just Ahead
Postoperative Considerations

- Consider adjuvants
- Review expectations
- Set realistic goals
- Understand side effects

Postoperative Considerations

- Additional agents
- Topical lidocaine
  - Tapentadol
  - Tramadol

Postoperative Considerations

- Postoperative opiate requirements 2-4x opioid-naive patients
- Start with 1.5-2x baseline requirements
- Immediate-release for breakthrough pain

Erlich D et al. Am Fam Physician. 2012 May 1;85(9):910-911

Postoperative considerations

- Followup with surgeon
- Followup with pain provider
- Treatment plan for taper

“It is more important to know what sort of person has a disease than to know what sort of disease a patient has.”

-Hippocrates