Management of Acute Pain in the Chronic Pain Patient

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Objectives

1. Describe the unique challenges of managing acute pain episodes in patients being treated for chronic pain
2. Review the non-opiate modalities to treat acute pain indications and contraindications
3. Discuss sample cases and possible management plans
In the United States, chronic pain affects more people than diabetes, heart disease, and cancer combined.

- **Chronic Pain**: 100 million Americans
- **Diabetes**: 25.8 million Americans
- **Heart Disease**: 16.3 million Americans
- **Cancer**: 11.9 million Americans
Challenges of Chronic Pain Patients
More opioid use (Chronic Pain [33%] + Recreation [1.6%])

More opioid tolerance

More difficulty managing acute pain
Goals – the triple (quadruple) aim

• Improved patient satisfaction
• Improve Clinical Outcomes
• Reduce the Cost of Healthcare

• Improved Provider Satisfaction
Multimodal Analgesia

- Opiates
- Acetaminophen
- NSAID
- Antiepileptics
- Regional/Neuraxial Analgesia
- Lidocaine
- Alpha-2 receptor agonists
- Ketamine

“multimodal” first introduced by Kehlet and Dahl in 1993\textsuperscript{1}
Multimodal Analgesia

“involves the concurrent use of more than one class of medication to target different mechanisms of analgesia and has been advocated to improve analgesia through additive or synergistic effects while reducing opioid-induced adverse effects”\(^\text{2}\)
Step 1 - PREPERATION

Case #1

- 64 yo female history of prescription opiate abuse currently on Suboxone 4 mg PO BID
- Subacute empyema requiring a right VATS possible thoracotomy for decortication
- How will you manage her pain?
Multimodal Analgesia

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Acetaminophen

- Metanalysis of 7 prospective trials
- Decreased morphine consumption by 20% during first 24 hours
- No effect on opiate induced side effects$^3$
Acetaminophen

- TJA
- 30% decrease in opiate consumption
- Better tolerated by the elderly and high-risk patients
- Decreased incidence of PONV$^6$
Multimodal Analgesia

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- Ketamine

NSAIDs

- Meta-analysis – NSAIDs at least as effective as codeine\(^7\)

Biddle C. AANA J. 2002;70(2):111-4
Multimodal Analgesia

- Opiates
- Acetaminophen
- NSAID
- **Antiepileptics**
- Regional/Neuraxial Analgesia
- Lidocaine
- Alpha-2 receptor agonists
- Ketamine
Anitconvulsants

• Gabapentinoids (alpha 2-delta agonists)
  • Chronic neuropathic pain
  • Prevelant in most multimodal protocols

• Pregabalin -> improved oral bioavailability

• May be helpful in opiate tolerant patients

Multimodal Analgesia

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Case #2

- A 76 year old male with a history of chronic back pain is scheduled for a L2-3, L3-4, L4-5 lumbar fusion.

- His narcotic use has increased over the past three years, at the time of surgery he is currently taking 30 mg OxyContin TID, and 20 mg Oxicodone every 4 hours as needed (though he reports it is almost on a scheduled basis). At best he states his pain is 7/10.

- How will you manage his pain?
Multimodal Analgesia

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Multimodal Analgesia

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• Reported to inhibit and possibly reverse opiate tolerance

• Study group received 0.5 mg/kg ketamine boluse then 10 mcg/kg/min gtt
• Decreased morphine consumption at 24 hours, 48 hours and 6 weeks after surgery

Loftus RW et al *Anesthesiology*. 2010 113(3):639-646
**Details for ketamine IV additive 500 mg + sodium chloride 0.9% drip 250 mL**

<table>
<thead>
<tr>
<th>Base Solution</th>
<th>Bag Volume</th>
<th>Rate</th>
<th>Infuse Over</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium chloride 0.9% drip</td>
<td>250 mL</td>
<td>TITRATE</td>
<td></td>
</tr>
<tr>
<td>Additive</td>
<td>Additive Dose</td>
<td>Normalized Rate</td>
<td>Delivers</td>
</tr>
<tr>
<td>ketamine IV additive</td>
<td>500 mg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Bag Volume</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weight:** 97 kg  
**Weight Type:** Clinical Weight  
**Result ch/tm:** 11/29/2017 08:51:00 MST

**Infusion instructions:**
This plan should ONLY be ordered by anesthesiologists or APS

**CAUTION**
- Continuous rate not advised for opioid naive or sensitive, BMI greater than 40, sleep apnea, heavy snoring or irregular respirations during sleep, hypercapnic or obstructive lung disease, chronic oxygen use, asthma or preoperative hemoglobin greater than 50%.
- Patients with altered level of consciousness, psychological instability, intellectual impairment, or confusion. CLINICIAN BOLUS preferred over PCA dose.

**DOsING RECOMMENDATIONS:** Continuous rate no greater than 0.5 times PCA dose; Clinician bolus 1 to 2 times the PCA dose.

**MEDICATIONS**
- **NOTE:** If a medication is not available for the facility of the active enuncounter please contact pharmacy for alternate or to request stock.

**Notes Recommended to discontinue all previously ordered benzodiazepines, opiates and sedating agents:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Medication</th>
<th>Dose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCA Orders</td>
<td>Ketamine PCA 1 mg/mL in NS 55 mL</td>
<td>IV PCA, PCA</td>
<td>If patient is experiencing nausea, vomiting or itching or if pain is not well controlled, notify treating provider</td>
</tr>
<tr>
<td></td>
<td>Morphine/Ketamine PCA 1 mg/mL in NS 55 mL</td>
<td>15 min Lockout Interval, IV PCA, PCA</td>
<td>If patient is experiencing nausea, vomiting or itching or if pain is not well controlled, notify treating provider</td>
</tr>
<tr>
<td></td>
<td>Hydromorphone/Ketamine PCA 0.2 mg/1 mg/mL in NS 55 mL</td>
<td>1 mL PCA Dose, 10 min Lockout Interval, IV PCA, PCA</td>
<td>If patient is experiencing nausea, vomiting or itching or if pain is not well controlled, notify treating provider</td>
</tr>
<tr>
<td>Side Effect Management</td>
<td>Lorazepam (Ativan)</td>
<td>0.5 mg, IV Push, every 6 hr, PRN other (see comment)</td>
<td>As needed for dizziness, hallucinations or agitation</td>
</tr>
<tr>
<td></td>
<td>Ondansetron (Zofran)</td>
<td>4 mg, IV Push, every 6 hr, PRN nausea, administer over 5 minutes</td>
<td>Notify the indicated provider if ineffective after initial dose</td>
</tr>
<tr>
<td></td>
<td>Nalbuphine (Nubain)</td>
<td>1 mg, IV Push, every 30 min, PRN itching, administer over 2 minutes</td>
<td>Call treating provider if more than 5 doses are given in a 4 hour period</td>
</tr>
</tbody>
</table>
Case #3

- A 82 year old male with a new diagnosis of metastatic colon cancer requires an urgent/semi emergent laparotomy and palliative colectomy for bowel obstruction.

- He had an intrathecal pump placed three years prior after failed back surgery and fusion at L2-3,L3-4. The pump has worked well to control his pain since its placement.

- How will you manage his pain?
Multimodal Analgesia

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Alpha-2 Adrenergic Agonists
Multimodal Analgesia

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Opiate consumption decreased by up to 85%

Inferior to epidural analgesia

• Unstable CAD
• Recent MI
• Heart Failure
• Heart Block
• Electrolyte disorders
• Liver Disease
• Seizure Disorder
### PM ANES Lidocaine Infusion EC, Lidocaine Infusion (Initiated Pending)

#### Patient Care
- **This plan should ONLY BE ordered by anesthesiologists or APS**
  - Heart Rate
  - Blood Pressure
  - Pain Assessment Adult
  - Cognitive Assessment
- **Continuous Infusions**
  - **How to enter lidocaine order**
    - Step 1: Calculate the ideal-body weight of patient (Calculator found in Powerchart)
    - Step 2: Modify Lidocaine Order
    - Update weight on order using IDEAL BODY WEIGHT
    - Normalized rate = \(1.25\, \text{mg/kg/hr}\)

#### Medications
- **Lidocaine IV drip**
  - 8 mg/mL in D5W (Adult)
  - Verify that medication is dosed using IDEAL BODY WEIGHT
  - ASSESSMENT: MONITOR for SIGNS/SYMPTOMS of...

#### Laboratory
- **Evaluate baseline liver function if liver disease is suspected.**
- **Routine collect, Once**
- **Routine collect, Once**

#### Non-Categorized
- **Click on evidence link to submit PowerPlan feedback**
- **Approved on 01/2017 (does not apply to individual favorites)**
  - by Dr. Matthew Waseman

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**PLEASE NOTE:** Dose Lidocaine using IDEAL BODY WEIGHT (IBW)
Case #4

• A 91 year old female with mild baseline dementia has broken her right hip after falling at home where she lives with her daughter. Surgery is planned for tomorrow.

• Per the daughter narcotic cause the patient extreme nausea and confusion.

• What is your plan to manage her pain?
Multimodal Analgesia

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ASA PSH 2.0 Collaborative - Team Health

- 77% reduction in pain meds in first 12 hours postoperatively
- 51% reduction in average pre-operative pain scores (ave 3.3)

This Care Process Model (CPM) was developed by the Intermountain Surgical Services’ Geriatric Hip Fracture (GHF) Program with input from experts in Intermountain’s Musculoskeletal Clinical Program. This CPM builds on the targeted patient care improvement program developed by Synthes and provides a framework for the successful management of geriatric hip fracture by enhancing best practices. Goals include improving time to surgery, decreasing mortality and post-surgery readmissions, improving patient satisfaction, and assuring cost accountability as well as regulatory compliance.

- **Anesthesia:** See the ORTHO Hip Fracture power plans in iCentra for guidance on pain management, nerve blocks, anesthesia type, medication choice, and dosage. Use regional anesthesia whenever appropriate.
- **Tranexamic acid (TXM):** Use weight-based dosing (10 mg/kg) vs. standard dose. For high-risk patients (e.g., personal or family history of DVT or PE) inject 2 mg intra-articularly.

Opiate Free Surgery

- Tylenol
- Celebrex
- Gabapentin
- Magnesium
- Ketamine
- Dexmedetomidine
- Regional Anesthesia
Safety
Questions

Thank You

and obligatory family photo

eric.k.cannon@gmail.com
References

11. McCarthy GC et al *Drugs* 2010;70(9):1149-63