The Use of Opioid Narcotics for the Pediatric Orthopaedic Patient

Harold J. P. van Bosse, M.D.
Shriners Hospital for Children
Philadelphia, Pennsylvania
Pediatric Orthopaedic Surgery

Musculoskeletal conditions
- Upper extremity
- Lower extremity
- Spine (neck to sacrum)

Conditions
- Trauma
- Deformity
  - Congenital
  - Acquired
- Tumors
- Syndromes
  - Prader-Willi Syndrome
  - Arthrogryposis
Pain Is Inherent to Our Specialty

- Patients present with pain
  - Fractures/injuries
  - Infections
  - Tumors
- Corrective surgery includes pain
- Relatively few chronically painful conditions
Pain Is Inherent to Our Specialty

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  - Fractures/injuries
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Pain is inherent to our specialty.

- Patients present with pain.
- Fractures/injuries.
- Infections.
- Tumors.
- Corrective surgery includes pain.
- Relatively few chronically painful conditions.
Pain Management Is Important

- Young patients have keen awareness of pain
- Do not always understand why they are subjected to pain
- Identification of “post-traumatic stress disorder”

Need for several procedures
Pain Management

Non-steroidal anti-inflammatory drugs
- Ibuprofen
- Naproxen
- Ketorolac

Analgesics
- Acetaminophen

Opioids
- Intravenous
- Oral
Disadvantages of Opioid Medications

- Respiratory depression
- Gastrointestinal dysfunction (ileus)
- Nausea, itching, confusion
- Habituation/dependence
- Abuse potential
Survey

Pediatric Orthopaedic Society of North America

264 respondents (~25% of membership)
Who Directs Outpatient Pain Management?

<table>
<thead>
<tr>
<th>Orthopaedist</th>
<th>75%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Specialist</td>
<td>3%</td>
</tr>
<tr>
<td>Combination</td>
<td>22%</td>
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</tbody>
</table>
Percutaneous Achilles Tenotomy
Percutaneous Achilles Tenotomy
Percutaneous Achilles Tenotomy
Percutaneous Achilles Tenotomy
Percutaneous Achilles Tenotomy

- Not applicable: 86%
- 1 week or less: 6%
- 1 to 2 weeks: 0%
- Up to 4 weeks: 3.6%
- More than 4 weeks: 7%
Outpatient Fracture Reduction and Casting
# Outpatient Fracture Reduction and Casting

<table>
<thead>
<tr>
<th>Medication</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No narcotics</td>
<td>32%</td>
</tr>
<tr>
<td>Hydrocodone (Norco, Vicodin)</td>
<td>46%</td>
</tr>
<tr>
<td>Oxycodone/Oxycontin</td>
<td>14%</td>
</tr>
<tr>
<td>Acetaminophen with codeine (Tylenol #3)</td>
<td>19%</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>2%</td>
</tr>
</tbody>
</table>
Outpatient Fracture Reduction and Casting
Outpatient Fracture Reduction and Casting

- Ibuprofen - main alternative
- Some preferred instantaneous release oxycodone over Oxycontin (E.R.)
  - Speed of onset
  - State pressure to reduce opioid deaths
Simple Operative Fracture
# Simple Operative Fracture

<table>
<thead>
<tr>
<th>Pain Management</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No narcotics</td>
<td>11%</td>
</tr>
<tr>
<td>Hydrocodone (Norco, Vicodin)</td>
<td>55%</td>
</tr>
<tr>
<td>Oxycodone/Oxycontin</td>
<td>26%</td>
</tr>
<tr>
<td>Acetaminophen with codeine (Tylenol #3)</td>
<td>21%</td>
</tr>
<tr>
<td>Oral Morphine (MS Contin, Duramorph)</td>
<td>1%</td>
</tr>
<tr>
<td>Hydromorphone (Dilaudid)</td>
<td>1%</td>
</tr>
<tr>
<td>Nalbuphine (Nubain)</td>
<td>0.4%</td>
</tr>
<tr>
<td>Tramadol (Ultram)</td>
<td>1.6%</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
Simple Operative Fracture

- Not applicable
- 1 week or less
- 1 to 2 weeks
- Up to 4 weeks
- More than 4 weeks

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Knee Arthroscopy
Knee Arthroscopy

- No narcotics 6%
- Hydrocodone (Norco, Vicodin) 43%
- Oxycodone/Oxycontin 18%
- Acetaminophen with codeine (Tylenol #3) 11%
- Not Applicable 32%
Knee Arthroscopy

Not applicable

1 week or less

1 to 2 weeks

Up to 4 weeks

More than 4 weeks

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No narcotics</td>
<td>4%</td>
</tr>
<tr>
<td>Hydrocodone (Norco, Vicodin)</td>
<td>58%</td>
</tr>
<tr>
<td>Oxycodone/Oxycontin</td>
<td>28%</td>
</tr>
<tr>
<td>Acetaminophen with codeine (Tylenol #3)</td>
<td>16%</td>
</tr>
<tr>
<td>Oral Morphine (MS Contin, Duramorph)</td>
<td>1.7%</td>
</tr>
<tr>
<td>Hydromorphone (Dilaudid)</td>
<td>2.5%</td>
</tr>
<tr>
<td>Nalbuphine (Nubain)</td>
<td>0.4%</td>
</tr>
<tr>
<td>Tramadol (Ultram)</td>
<td>0.8%</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>6%</td>
</tr>
</tbody>
</table>
Hip Procedure Young Child

Hycet – acetaminophen/hydrocododone

Not applicable
1 week or less
1 to 2 weeks
Up to 4 weeks
More than 4 weeks

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
## Hip Procedure Older Child/Teen

<table>
<thead>
<tr>
<th>Medication</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No narcotics</td>
<td>5%</td>
</tr>
<tr>
<td>Hydrocodone (Norco, Vicodin)</td>
<td>62%</td>
</tr>
<tr>
<td>Oxycodone/Oxycontin</td>
<td>30%</td>
</tr>
<tr>
<td>Acetaminophen with codeine (Tylenol #3)</td>
<td>14%</td>
</tr>
<tr>
<td>Oral Morphine (MS Contin, Duramorph)</td>
<td>1%</td>
</tr>
<tr>
<td>Hydromorphone (Dilaudid)</td>
<td>2%</td>
</tr>
<tr>
<td>Tramadol (Ultram)</td>
<td>2%</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>4%</td>
</tr>
</tbody>
</table>

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This chart represents the percentage of patients using different types of pain medications after a hip procedure for older children and teenagers.
Hip Procedure Older Child/Teen

- Not applicable
- 1 week or less
- 1 to 2 weeks
- Up to 4 weeks
- More than 4 weeks

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Spinal Fusion
Spinal Fusion

- No narcotics 1%
- Hydrocodone (Norco, Vicodin) 34%
- Oxycodone/Oxycontin 34%
- Acetaminophen with codeine (Tylenol #3) 7%
- Oral Morphine (MS Contin, Duramorph) 4%
- Hydromorphone (Dilaudid) 4%
- Nalbuphine (Nubain) 0.4%
- Tramadol (Ultram) 2%
- Not Applicable 35%
Spinal Fusion

- Movement is important
- Oral medications less constipating than IV
- Return to school 4-8 weeks
Narcotics as Backup Plan

- State specific narcotic prescription rules
  - No telephone prescriptions, paper only
  - Situations with lower probability of pain
    - “Prophylactic” narcotic prescription?
  - Distance and “middle of night”

Bar chart:
- Yes: 58%
- No: 42%
Pre- or Non Surgical Patients

- Prescribed narcotics for painful conditions
- Prior to any surgical treatment
- No fracture

15%

85%

Osteogenesis Imperfecta
Opioid Abuse in Pediatric Patients?

- 21% of doctors knew of a patient
- 79% did not know of any such patients

- Patients with chronic pain conditions
- Patient selling their pills
- Some had unconfirmed suspicions
Opioid Abuse by Patient’s Family?

- Some estimated at 0.5% of events
- Many had unconfirmed suspicions
  - Especially in cases of refill requests
- Occasional “fictitious pain”

39% knew of at least one instance
61% did not
Conclusions

- **Outpatient opioids in pediatric orthopaedics**
  - Very important for pain management
  - Widely used
  - Decrease hospital stays

- **Oxycodone (immediate release or Oxycontin)**
  - Used in 14% to 34% of instances
  - More often in more painful procedures
  - Should be initially trialed in hospital with patient days prior to discharge
Conclusions

Length of use

- Less than one week for most situations
- Only the most extreme situations call for treatment up to 4 weeks
- Medications refilled only rarely

“Prophylactic” prescribing

- Need new strategies
Conclusions

Abuse

- Potential well recognized
- Ever vigilant
- Teach parents
  - Warning signs (sedation, nausea, dizziness)
  - Only parents can dispense drugs
  - Keep journal of medication use

More research

- Pediatric pain management strategies
- Methods to prevent abuse
THANK YOU