Acute Pain Management:
Assessment, Prevention, and Treatment of Pediatric Pain in the ED and the Office

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Disclosures

none
Pain Defined

- IASP: “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage”

- Composite of stimulus and interpretation

- Innate and external factors can amplify or diminish pain
“Pain is whatever the patient says it is and it exists whenever he or she says it does.”
Although the world is full of suffering, it is also full of the overcoming of it.
Prevention

• Anticipate - more medication must be administered to ameliorate pain that has occurred than to prevent its occurrence
• Prepare
  – Clear expectations
  – Practice
  – Video/demonstrations
• Clear Developmentally Appropriate Instructions
• Cluster Interventions
Why prevent or treat “minor” pain?

• Evidence that painful experiences “add up”
• Children and parents appreciate the effort
• Less fear of the next visit means a better experience for all
• It’s an important part of world class care
• It’s the right thing to do
Pain Assessment

• Scoring pain causes us to focus
• Initial pain scores should be standard practice
• Serial scores
• Scoring leads to improvement efforts
• Scoring by providers? Parents/caregivers? Child?
• Self report is the gold standard
• Unique challenges in children with neurologic impairment
Assessment – Age 0-2 years

• Requires subjective assessment/scoring
• Pain detection vs pain intensity in infants
• Many scales used in neonates: PIPP, N-PASS, NIPS, CRIES
• Large inter-observer variability and subjectivity
• Physiologic parameters helpful but not reliable
### Revised FLACC pain score

<table>
<thead>
<tr>
<th>Categories</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F</strong> Face</td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown, withdrawn, disinterested; appears sad or worried</td>
<td>Frequent to constant frown, clenched jaw, quivering chin; distressed-looking face; expression of fright or panic</td>
</tr>
<tr>
<td><strong>L</strong> Legs</td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense; occasional tremors</td>
<td>Kicking, or legs drawn up; marked increase in spasticity, constant tremors or jerking</td>
</tr>
<tr>
<td><strong>A</strong> Activity</td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense; mildly agitated (eg, head back and forth, aggression); shallow and splinting respirations, intermittent sighs</td>
<td>Arched, rigid, or jerking; severe agitation, head banging, shivering (notrigors); breath-holding, gasping or sharp intake of breath; severe splinting</td>
</tr>
<tr>
<td><strong>C</strong> Cry</td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers, occasional complaint; occasional verbal outburst or grunt</td>
<td>Crying steadily, screams or sobs, frequent complaints; repeated outbursts, constant grunting</td>
</tr>
<tr>
<td><strong>C</strong> Consolability</td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging, or being talked to, distractable</td>
<td>Difficult to console or comfort; pushing away caregiver, resisting care or comfort measures</td>
</tr>
</tbody>
</table>

This pain score can be used to assess pain from burns and other etiologies for preverbal children.
- Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.
- **Patients who are awake:** Observe for at least 1-2 minutes. Observe legs and body uncovered. Reposition patient or observe activity, assess body for tenseness and tone. Initiate consoling interventions if needed.
- **Patients who are asleep:** Observe for at least 2 minutes or longer. Observe body and legs uncovered. If possible reposition the patient. Touch the body and assess for tenseness and tone.
- The revised FLACC can be used for children with cognitive disability. The additional descriptors (in italics) are included with the original FLACC. The nurse can review the descriptors within each category with parents. Ask them if there are additional behaviors that are better indicators of pain in their child. Add these behaviors to the tool in the appropriate category.

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Assessment – 3 Years and Above

- Self report!
- Developmentally appropriate tools – faces, colors, numbers
- Behavioral Indicators
- Parent/Caregiver Input
- Response to intervention
Treating Pain in Children
Non pharmacologic Measures for Neonates

- Breastfeeding
- Skin to skin
- Pacifier
- Swaddling
- Multiple simultaneous measures
- Sucrose water (12-50%)
Cognitive/Behavioral/Psychological Approaches

• Preparation, Practice
• Distraction, Imagery, Hypnosis
• Avoid Startle
• Parental Presence/Coaching
• Comfort Toys
• Child Life
Cognitive/Behavioral/Psychological Approaches

- Art/Play Therapy, Exercise, Biofeedback
- Music Therapy
- Distraction Units
- Popsicles/Slushies
- Buzzy
Topical Anesthetics

• Open Wounds
  – LET

• Intact Skin
  – EMLA and ElaMax 4
  – Vapocoolant spray
  – Needle free lidocaine (J tip)
  – Lidocaine Tetracaine patch (Synera)
  – Lidocaine iontophoresis (Numby Stuff)
LET

- Mixture of lidocaine, epinephrine and tetracaine
- Most common local anesthetic for lacerations
- Not on mucous membranes
- Apply directly or soak a cotton ball and apply +/- occlusive dressing
- Approximately 30 minute wait
Vapocoolant Spray

• Ethyl chloride or fluoromethane
• Rapid
• Intact skin only
• Spray until blanching, 8-10 seconds
• Lasts about 1 minute
• Useful for Quick I&D, IM injection, immunizations
EMLA

- Lidocaine and Prilocaine
- Use with an occlusive dressing
- Depth of anesthesia 3-4 mm
- 1 hour to work
- Immunizations, venipuncture, intravenous lines
- Age 3 months and older
- Synera patch – no leakage
Other Topicals

- **J tip**
  - Jet Injected Lidocaine
  - Immediate
  - Startling noise

- **Numby Stuff**
  - Lidocaine
  - Works in 10 minutes
Injectable Lidocaine

- With or Without Epinephrine
- Temperature, Needle Size, Speed of Injection
- Max Dosing
- Wounds/Lacerations
- Nerve Blocks
The Mainstays

• Tylenol
  – 15 mg/kg/dose, max daily dose 75 mg/kg/day
  – Oral, Rectal Suppository, Injection

• Ibuprofen
  – 10 mg/kg/dose
  – Oral

• Also, Toradol IV/IM/PO
  – 0.5 mg/kg/dose, max 15-30 mg
  – Age 1 year and above
Nitrous Oxide

- Noninvasive delivery mechanism
- Rapid onset
- Short duration of activity
- Safe and well tolerated
- Concentrations of 50% or less
- Age 2 years and above
- Laceration repair, IV lines, lumbar puncture, fracture reduction, sexual abuse evaluations
- Requires proper equipment, scavenging
- Risks with chronic use
Opioids

• Moderate to Severe Pain
• Caution

• Fentanyl – intranasal
  – Useful for rapid pain management – fractures, burns
  – Rapid effect, Short acting
• Oxycodone/Hydrocodone liquid-tabs
  – Careful with Tylenol dosing
• Morphine/Hydromorphone
Opioids – Hot Topics

• Abuse

• Risk Factors

• Nonopioids vs opioids for fracture pain in children

• NO codeine or tramadol in children < 12 years, caution in 12-18 years
Medical Cannabinoids in Children

• Neuropathic pain
  – Dronabinol (Marinol, Syndros) = THC
  – Epidiolex = CBD

• Very limited data in children and teens
• Insufficient evidence for use as pain reliever
Questions?
• International Association for the Study of Pain. IASP taxonomy. Available at: www.iasp-pain.org/Taxonomy