INTRANASAL FENTANYL

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WHAT WE COVER

- Pain
  - Children in Pain
  - Analgesia
  - Pain Scales
  - Time to Analgesia

- Research
  - Current Research
  - Area’s Further Research

- Fentanyl
  - Indications
  - Pharmacotherapeutics
  - Legislation
  - Precautions
  - Dose
  - Intranasal Route
  - Adverse Effects
  - Delivery
  - Recovery and Discharge
PAIN

• Pain
  – Individual
  – Often misunderstood
  – Difficult to measure in children

• Children in Pain
  – Unpredictable
  – Frightened
  – Show varying responses
  – Behaviour changes
PAIN SCALE

Wong-Baker FACES Scale

Hinks, von Baeyer, Spafford, von Korlaar & Goodenough (2001)
# PAIN SCALES

## FLACC Pain Scale

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Face</strong></td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown, withdrawn, disinterested</td>
</tr>
<tr>
<td><strong>Legs</strong></td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense</td>
</tr>
<tr>
<td><strong>Cry</strong></td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers; occasional complaint</td>
</tr>
<tr>
<td><strong>Consolability</strong></td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging or being talked to, distractible</td>
</tr>
</tbody>
</table>

*Manworren & Hynan (2003)*
ANALGESIA

• Requirements
  – Initiated at triage
  – Least invasive
  – Easy to use
  – Non-specialist skill
  – Minimum time to analgesia
  – Effective

FENTANYL

• Pharmacotherapeutics
  – Synthetic opiate analgesic
  – Anxiolitic
  – Euphoric
  – Rapid Onset (5 – 10 minutes)
  – Short acting (30 – 60 minutes)

• Legislation
  – Controlled Medicine

MEDSAFE (2009), Shepherd (2007),
PAIN PATHWAY

Rang, Dale, Ritter & Flower (2007)
Published Research Shows

- Effective
- Safe
  - Children > 2 years
- Comparative effect to IV Morphine in pain relief for:
  - Long bone fractures
  - Post operative pain
  - Burns dressings

INDICATIONS

- Intranasal (IN) Fentanyl
  - Pain (moderate / severe)
  - No IV access
  - Allow time for topical anaesthetic creams to work

INTRANASAL ROUTE

• Absorption
  – Rapid (5-10 minutes)
    • Large nasal mucosa surface area
    • Highly permeable nasal mucosa
    • Skip first pass metabolism
    • Bioavailability of greater than 50%

• Minimally Invasive
  – Decreases time to analgesia

Shepherd (2007)
PRECAUTIONS

• Conditions requiring immediate IV intervention
• URTI / Blocked Nose
• Prior narcotic or sedative administration
• Co morbidities requiring modified dose
• Drug Dependence

Medsafe (2009), Shepherd (2007)
CONTRAINDICATIONS

- Caution in age less than 2 years
- Trauma
  - Head
  - Chest
  - Abdominal
- MAO Inhibitors
- Bronchial Asthma

Shepherd (2007); MEDSAFE (2009)
DOSE

• **Limits**
  - Minimum dose 20 micrograms
  - Maximum dose 100 micrograms

• **First Dose**
  - 1.5 micrograms / kg

• **Second Dose**
  - 0.5 micrograms / kg
  - > 10 minutes post first dose

*Shepherd (2007)*
ADVERSE EFFECTS

• Nausea
• Vomiting
• Sedation
• Respiratory Depression
• Muscle Rigidity

MEDSAFE (2009), Shepherd (2007)
DELIVERY EQUIPMENT

- Atomizer (MAD Device)
- 1 ml syringe (luer lock)

*Therapeutic Intranasal Medication Delivery (2009)*,
DELIVERY TECHNIQUE

• Positioning
  – Reclining 45 degrees

• Maximum Volume
  – 1 ml per nostril

• Sniff
  – while IN Fentanyl delivered
RECOVERY AND DISCHARGE

• Observe for 20 minutes
  – Escort for transfers

• Discharge after 1 hour
  – If responding age appropriately

• Patient / Parent Information

Shepherd (2007)
FURTHER RESEARCH

- Nurse initiated IN Fentanyl
- Concentrated IN Fentanyl Solution
- IN Fentanyl for children under 2 years
Starship Children's Hospital Clinical Guidelines
Intranasal Fentanyl

Dosage
- 1.5 micrograms / kg (first dose)
- 0.5 micrograms / kg (second dose)
  10 minutes post first dose
- maximum dose 100 micrograms

Delivery
- maximum 1 ml per nostril
- position - reclinined at 45 degrees

Onset
- 5-10 minutes

Half Life
- 30-60 minutes

Precautions
- Blocked Nose
- Injury Nature
- Prior Narcotic Doses
- Co-morbidities

Actions
- analgesic
- anxiolytic
- euphoric

Contraindications
- Head Injury
- Chest Injury
- Abdominal Trauma
- Age < 2 years
- Hypersensitivity

Adverse Effects
- Nausea
- Vomiting
- Sedation
- Respiratory Depression

Indications
- Pain (Moderate /Severe)
- IVL unavailable
- Allow time for local topical anaesthetic cream to be effective
REFERENCES


