Intranasal Anxiolytic and Pain Medication Use in a Pediatric Burn Unit

Conflict of Interest

Conflict of Interest Disclosure

- Conflicts of Interest for ALL listed contributors.
  - P. Plowman, RN-BC – No conflict of interest
  - K. Pothier– No conflict of interest

A conflict of interest is a particular financial or non-financial circumstance that might compromise, or appear to compromise, professional judgment. Anything that fits this should be included. Examples are owning stock in a company whose product is being evaluated, being a consultant or employee of a company whose product is being evaluated, etc.

### Objectives

- Review basic burn identification and treatment of children with burn injuries.
- Identify strategies used to treat pain and anxiety in burn patients.
- Describe methods, patient selection, medication dosing and administration of intranasal medication.

### Riley Hospital

- Riley Hospital for Children at IU Health
  - Indianapolis, IN
  - Level 1 Trauma Center
  - 300 Beds

### Riley Burn Center

- Verified Burn Center by American Burn Association (ABA)
  - 10 Beds
  - PT/OT Gym
  - 3 Tub Rooms
  - Procedure Room
  - Outpatient Clinic
Patient Population

- Burns
  - TBSA
  - Age
  - Mechanism
- ICU Overflow
  - Neurosurgery
  - Respiratory
  - Plastic Surgery
  - Trauma

Burn 101

- Classification
  - Superficial Thickness
  - Partial Thickness
  - Full Thickness
  - Inhalation

Burn 101-Treatment

- Surgical Intervention
  - Homograft
  - Autograft
  - Xenograft
  - Cultured Epithelial Autograft (CEA)
  - Re-Cell
  - Release Surgery
  - Tissue Expander
  - Laser Treatment
Burn 101-Treatment

- Dressing Changes
  - Daily or BID
  - Topical Medications
  - Dressings

Burn 101-Bedside Procedures

- Wound Vac Changes
- Staple Removal
- Donor Site Care
- PT/OT
- Daily Bath/Dressing Changes
- Misc. Invasive Procedures

Pain Management/Anxiety

- Multi-Modal Approach
  - Child Life
  - Music Therapy
  - Art Therapy
  - Pet Therapy
  - Sedation Team
  - Medication
Child Life: My Burn Journey App

- The Riley Burn Center developed a free app to help educate and provide distraction to specifically help pediatric burn patients
- This app was featured by mobihealthnews.com as the #1 app from children’s hospitals
- Search “My Burn Journey” in the App Store to get this app on your iPad

Medications

- Types of medications used:
  - Opioids
  - Benzodiazepine
- Routes:
  - Oral: pre-medicate 30-45 minutes
  - Intravenous
  - Intranasal

Route Comparison Chart

<table>
<thead>
<tr>
<th></th>
<th>IV</th>
<th>PO</th>
<th>IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncat</td>
<td>quick</td>
<td>delayed</td>
<td>quick</td>
</tr>
<tr>
<td>Duration</td>
<td>short*</td>
<td>prolonged*</td>
<td>short*</td>
</tr>
<tr>
<td>Cost</td>
<td>$$$</td>
<td>$</td>
<td>$$$</td>
</tr>
<tr>
<td>Resource Utilization</td>
<td>+++</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Invasive</td>
<td>**</td>
<td>minimal</td>
<td>*</td>
</tr>
<tr>
<td>Titratable</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Easy to use</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Needle Stick Risk</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Intranasal

• Methods
  – Unit Specific protocol for IN medications developed that included:
    • Criteria
    • Medication Doses
    • Administration Techniques
    • Monitoring
  – Incorporated procedural and sedation analgesia policy
  – Staff education completed
    • Pharmacists
    • Nurses
    • Physicians

Intranasal-Patient Criteria

• Inclusion:
  – 6 months or older
  – Oral therapy not appropriate as monotherapy
  – Intravenous (IV) line not needed
  – Less than 5% total body surface area (TBSA)

• Exclusion:
  – External or internal nasal abnormalities
  – Facial/nasal burns that might interfere with administration
  – Fluid resuscitation

Intranasal-Dosing

• Fentanyl
  – Dose 1-2 mcg/kg (maximum of 100 mcg)
  • Additional dose of 0.3-0.5 mcg/kg may be given
  • Do not exceed a total dose of 3 mcg/kg (maximum 150 mcg)
  – Product: 50 mcg/ml

• Midazolam
  – Dose 0.2-0.3 mg/kg (maximum of 10 mg)
  • Additional dose may be given
  • Do not exceed a total dose of 0.5 mg/kg (maximum 10 mg)
  – Product: 5mg/ml
Intranasal-Administration

- Atomized delivery using the IV product
- Give 5-10 minutes prior to procedure
- Minimize drug volume
  - Maximum of 1mL per nostril

Intranasal-Monitoring

- Cardiac/Apnea monitor during administration
- Baseline vitals
- Bedside safety measures
- RN to monitor until vital signs and level of consciousness are back to baseline
- Opioid naïve: sedation level and respiratory rate/depth every 1-4 hours during the first 24 hours

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References