Pain Management in the Emergency Department

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October 2005 Revised Oct 2007
The Current State

- Up to 60-70% of patients presenting to the ED have pain as part of their presenting symptom.
- More than one third of all ED patients are reported to have moderate to severe pain.
- Health care providers consistently underestimate the severity of patient’s pain.
- The under use of analgesics or “oligoanalgesia” in the ED is an internationally recognized problem.
The Current State  cont’d

- When analgesia is given, it is often given late
- The paediatric population and elderly receive suboptimal analgesia
- Organizations that have formal education programs on the treatment of pain demonstrate higher patient satisfaction with their pain management
- In studies where nurse initiated analgesia protocols were used, the time to analgesia improved by half
Up to 60-70% of patients presenting to the ED have pain as part of their presenting symptom...

More than one third of all ED patients are reported to have moderate to severe pain...

In a study of 525 patients from 2 university affiliated hospitals (Atlanta and Chicago) subjects reported a high pain intensity level.

Possible reasons for oligoanalgesia

- Fear of masking symptoms of significant head or abdominal injury
- Fear that opioids may precipitate hypotension in patients that are bleeding
- The belief that acutely injured patients will not remember the painful events
- Pain management is not the highest priority versus resus, diagnostics, OR
Groups at risk for Oligoanalgesia

- Children
- Elderly
- Minorities
- Those with abdominal pain
- Those with a low Revised Trauma Score (RTS)
In studies where nurse initiated analgesia protocols were used, the time to analgesia improved by half...

<table>
<thead>
<tr>
<th>Group</th>
<th>Nurse-initiated</th>
<th>Non-nurse-initiated</th>
<th>Effect size, min (and 95% CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>31</td>
<td>57</td>
<td>26 (16-36)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Clustered</td>
<td>31</td>
<td>60</td>
<td>29 (19-41)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Renal colic</td>
<td>29</td>
<td>50</td>
<td>21 (12-32)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Biliary colic</td>
<td>32</td>
<td>66</td>
<td>34 (8-104)</td>
<td>0.0174</td>
</tr>
</tbody>
</table>
What is keeping you from providing good pain management all the time?

- Surgeons who fail to order analgesics
- EMO’s that hold narcotic for the surgeon to assess
- Surgeons who fail to return your calls
- Analgesics inappropriately listed as “allergies”
- Not truthful patients
- Concern re drug seeking
- Not enough analgesia ordered, pain difficult to stabilize
- Dosing schedules that are limiting e.g. q4-6h prn
- Waiting for lab/diagnostic results
- Underdosing or wrong drug for kind of pain

What do you suggest to improve?
Establishing an Emergency Department Pain Management System

Implications of the current state:
- Pain is the most prevalent symptom in the ED
- Patient expectations are quite high (23 minutes from arrival - Fosnoch)
- Disparities amongst ethnic groups exist
- Documentation of pain treatment is actually worse than treatment

-Richards, C.F. 2004
Setting Up the Program

Consider:
- Assessment
- Acute vs chronic
- Potential medication tolerance
- Concurrent anxiety
- Psychiatric issues
- Communication with other members of the health care team
- Assessment tools
- Program monitoring
Treatment of Pain in the ED

- Opiate analgesics
- Non opioid analgesics
- Adjuvants
The Registered Nurse (RN) in the Emergency Department may provide a single analgesic dose to patients presenting with pain, prior to an Emergency Physician evaluation. This is done according to the inclusion and exclusion criteria listed below.

Inclusion Criteria:
- Pediatric patients greater than 5 years old and less than 16 years old and less than 50 kg.
- Adult patients.

Exclusion Criteria (Ineligible Patients):
- Allergies or intolerances to the analgesic medications listed in this protocol
- Level 1
- Open fractures, amputation, multiple trauma
- Unstable vital signs
- Unstressed (Glasgow Coma Scale less than 14)
- Head injury with alteration in LOC
- Headache with alteration in LOC
- Intoxication
- Delirium
- COPD/Asthma
- Extensive comorbidities, such as severe liver disease, renal failure, cardiac disease
- Suspected or actual pregnancy

Implementation:
1. Assess and document the need for analgesia.
2. Review medications last taken for pain
3. Complete a patient assessment. Include weight for pediatric patients. Circle the level of pain on the pain scale and/or describe the pain in the space provided.
4. Select one of the appropriate analgesic medications for eligible patients from the standing orders. Note any contraindications and discuss with the patient or caregiver. Adjuvant antiemetic may be given as appropriate.

5. **Any adult patient requiring Morphine/Hyromorphone must be in the Emergency Department on a stretcher bed with side rails up. Morphine/Hyromorphone is not given in the Triage Area.**

   **Any pediatric patient requiring Morphine, Codeine po or Dimenhydrinate must be in the Emergency Department on a stretcher bed with the side rails up. These medications are not given in the Triage Area.**

6. Document analgesia given, write in dose, circle route of administration as appropriate.
7. Reassess the patient within 15 minutes following administration of analgesia and document assessment. If pain control is not effective, consider expediting medical assessment or consult with the physician.
**PAIN MANAGEMENT BY THE REGISTERED NURSE IN THE EMERGENCY DEPARTMENT**

### Adult Analgesia:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine 2 to 5 mg IV/IM/po/subcut x 1 dose</td>
<td>Allergy or history of hypersensitivity</td>
</tr>
<tr>
<td>For patients greater than 65 years, Hydromorphone 0.5 to 1 mg IV/IM x 1 dose</td>
<td>Allergy or history of hypersensitivity</td>
</tr>
<tr>
<td>Ketorolac 15 to 90 mg IV/IM/subcut (15 mg if greater than 65 years or renal impairment) x 1 dose</td>
<td>Bleeding disorder or presently taking anticoagulation medication, HX of GI ulcer/bleed, renal impairment, ASA or NSAID allergy</td>
</tr>
<tr>
<td>Acetaminophen 30 mg 1 to 2 tablets po</td>
<td>Hepatic impairment, Allergy to codeine or related compounds.</td>
</tr>
<tr>
<td>Acetaminophen 500 mg to 1000 mg po</td>
<td>Hepatic impairment</td>
</tr>
<tr>
<td>Ibuprofen 200 mg to 400 mg po</td>
<td>Bleeding disorder, HX of GI ulcer/bleed, renal impairment, ASA or NSAID allergy</td>
</tr>
<tr>
<td>Adjunct Antiemetic: Dimenhydrinate 25 to 50 mg IV/IM/po/subcut</td>
<td>Glaucoma, difficulty urinating dtprostatic hypertrophy</td>
</tr>
<tr>
<td>Adjunct Antiemetic: Metoclopramide 5 to 10 mg IV/SC/po</td>
<td>Seizure disorder, GI hemorrhage, obstruction or perforation, pheochromocytoma, concomitant use of drugs with extrapyramidal side effects (e.g., antipsychotics)</td>
</tr>
</tbody>
</table>

### Pediatric Analgesia:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose Calculation</th>
<th>Max Dose</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine 0.05 to 0.1 mg per kg body wt x 5 minutes</td>
<td>Morphine 0.05 mg per kg x body wt = x mg to 0.1 mg per kg x body wt = x mg</td>
<td>15 mg</td>
<td>Allergy of history of hypersensitivity</td>
</tr>
<tr>
<td></td>
<td>Dose = x mg given IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Codeine 0.5 to 1 mg per kg body wt</td>
<td>Codeine 0.5 mg per kg x body wt = x mg to 1 mg per kg x body wt = x mg</td>
<td>60 mg</td>
<td>Allergy to codeine or related compounds</td>
</tr>
<tr>
<td></td>
<td>Codeine 0.5 mg per kg x body wt = x mg given po</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetaminophen 10 to 15 mg per kg body wt</td>
<td>Acetaminophen 10 mg per kg x body wt = x mg to 15 mg per kg x body wt = x mg</td>
<td>1000 mg</td>
<td>Hepatic impairment</td>
</tr>
<tr>
<td></td>
<td>Acetaminophen 10 mg per kg x body wt = x mg given po</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ibuprofen 5 to 10 mg per kg body wt</td>
<td>Ibuprofen 5 mg per kg x body wt = x mg to 10 mg per kg x body wt = x mg</td>
<td>400 mg</td>
<td>Bleeding disorder, HX of GI ulcer/bleed, renal impairment, ASA or NSAID allergy</td>
</tr>
<tr>
<td></td>
<td>Dose = x mg given po</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjunct Antiemetic: Dimenhydrinate 1.25 mg per kg IV/IM/po Circle route.</td>
<td>Dimenhydrinate 1.25 mg per kg x body wt = x mg given IV or IM or po</td>
<td>50 mg</td>
<td>Glaucoma</td>
</tr>
</tbody>
</table>

Approved By Department of Emergency Medicine: December 2005
Approved By Department of Pediatrics: March 2006
Date of Issue: March 2000
Date of Revision: June 2006
STANDING ORDERS FOR PAIN MANAGEMENT: ADULT PATIENTS

These orders may be implemented prior to physician consultation.

Exclusion Criteria (Ineligible Patients):
- Allergies or intolerances to the analgesia medications listed in this protocol
- Level 1
- Open fractures, amputation, multiple trauma
- Unstable vital signs
- Obtunded (Glasgow Coma Scale less than 14)
- Head injury with alteration in LOC
- Headache with alteration in LOC
- Intoxication
- Delirium
- COPD/Asthma
- Extensive comorbidities, such as severe liver disease, renal failure, cardiac disease
- Suspected or actual pregnancy

Circle intensity of pain

<table>
<thead>
<tr>
<th>Numerical Rating Scale</th>
<th>Faces Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>[Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 4 6 8 10</td>
</tr>
</tbody>
</table>

Adult Analgesia:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine 2 to 5 mg IV/IM/po/subcut</td>
<td>x 1 dose</td>
<td>Allergy or history of hypersensitivity</td>
</tr>
<tr>
<td>Paracetamol 15 mg IV/IM/po/subcut</td>
<td>(15 mg if greater than 65 years old or renal impairment) x 1 dose</td>
<td>Bleeding disorder or presently taking anticoagulation medication, Hx of GI ulcer/bleed, renal impairment, ASA or NSAID allergy</td>
</tr>
<tr>
<td>Acetaminophen 300 to 1000 mg po</td>
<td></td>
<td>Hepatic impairment. Allergy to codeine or related compounds.</td>
</tr>
<tr>
<td>Acetaminophen 500 mg to 1000 mg po</td>
<td></td>
<td>Hepatic impairment</td>
</tr>
<tr>
<td>Ibuprofen 200 mg to 400 mg po</td>
<td></td>
<td>Bleeding disorder, Hx of GI ulcer/bleed, renal impairment, ASA or NSAID allergy</td>
</tr>
<tr>
<td>Adjunct Antimetic: Dimenhydrinate 25 to 50 mg IV/IM/po/subcut</td>
<td></td>
<td>Glaucoma, difficulty urinating due to prostatic hyperplasia</td>
</tr>
<tr>
<td>Adjunct Antimetic: Metoclopramide 5 to 10 mg IV/SC/po</td>
<td></td>
<td>Seizure disorder, GI hemorrhage, obstruction or perforation, pheochromocytoma, concomitant use of drugs with extrapyramidal side effects (e.g., antipsychotics)</td>
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</table>

Assessment

<table>
<thead>
<tr>
<th>RN Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

Approved By Department of Emergency Medicine: December 2005
P&T/MAC Approved: May 2006
Date of Issue: June 2006
Date of Revision: June 2006  Ph091
STANDING ORDERS FOR PAIN MANAGEMENT: PEDIATRIC PATIENTS

- Greater than 5 years, and
- Less than 16 years, and
- Less than 50 kg

These orders may be implemented prior to physician consultation.

Exclusion Criteria (Ineligible Patients):
- Allergies or intolerances to the analgesia medications listed in this protocol
- Level 1
- Open fractures, amputation, multiple trauma
- Unstable vital signs
- Obstructed (Glasgow Coma Scale less than 14)
- Head injury with alteration in LOC
- Headache with alteration in LOC
- Intoxication
- Delirium
- Asthma
- Extensive comorbidities, such as severe liver disease, renal failure, cardiac disease
- Suspected or actual pregnancy

Circle level of pain

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

Description

**Pediatric Analgesia:**

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<tr>
<th>Medication</th>
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<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Morphine 0.05 mg per kg x body wt = mg to 0.1 mg per kg x body wt = mg Dose = mg given IV</td>
<td>15 mg</td>
<td>Allergy of history of hypersensitivity</td>
</tr>
<tr>
<td>Codeine 0.5 to 1 mg per kg po</td>
<td>Codeine 0.5 mg per kg x body wt = mg to 1 mg per kg x body wt = mg given po</td>
<td>60 mg</td>
<td>Allergy to codeine or related compounds</td>
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<tr>
<td>Acetaminophen 10 to 15 mg per kg po</td>
<td>Acetaminophen 10 mg per kg x body wt = mg to 15 mg per kg x body wt = mg given po</td>
<td>1000 mg</td>
<td>Hepatic impairment</td>
</tr>
<tr>
<td>Ibuprofen 5 to 10 mg per kg po</td>
<td>Ibuprofen 5 mg per kg x body wt = mg to 10 mg per kg x body wt = mg Dose = mg given po</td>
<td>400 mg</td>
<td>Bleeding disorder, Hx of GI ulcer/bleed, renal impairment, ASA or NSAID allergy</td>
</tr>
<tr>
<td>Adjunct: Antisemetic Dimehydramine 1.25 mg per kg IV/IM/po</td>
<td>Dimehydramine 1.25 mg per kg x body wt = mg given IV or IM or po</td>
<td>50 mg</td>
<td>Glaucoma</td>
</tr>
</tbody>
</table>

Reassessment

<table>
<thead>
<tr>
<th>RN Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

Approved By Department of Emergency Medicine: December 2006
Approved By Department of Pediatrics: March 2006
PA/MAC Approved: May 2006
Date of Issue: June 2006
Date of Revision:
Pain Audit Results at BRHC

Nurse Initiated Analgesia

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre Implementation</th>
<th>Post Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charts audited</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Patients not meeting inclusion criteria</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Patients receiving analgesic standing orders</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Patients receiving analgesic physician orders</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>
Reasons Analgesic Not Given

Patients Not Receiving Analgesia

- Patients not requiring analgesia
- Left without being seen
- Patients refused analgesia
- Analgesic needs not addressed

Number of patients

Pre Implementation
Post Implementation
Post Implementation Results
Sept 2007

Time from Triage to Analgesia

Time in Minutes

Pre implementation

Post implementation

Physician Ordered
Standing Orders
Benefits of the Protocol

- Has cut the time to pain medication by almost half
- Where the nurse has not initiated the medication there is an increased awareness and pain is being addressed more rapidly by physicians
- Decrease in patient complaints regarding pain
- Increased staff satisfaction of being able to care for patients during triage waits
- Increased comfort for patients awaiting physician assessment and diagnostic tests
- Physicians are better able to examine patients in some cases
Tribulations of implementation

- Surgeons particularly are a hard sell
- Staff still need to do the paper work
- Documentation reassessment still needs to be improved
Legal Issues in Pain Management

- Pain is a symptom → there still remains an expectation to treat the symptom
- It can be argued that failure to properly manage pain may be professional negligence
- Threat of malpractice suits for under treatment of pain is on the rise
Organizations that have formal education programs on the treatment of pain demonstrate higher patient satisfaction with their pain management...

and

a clear and definitive pain management protocol results in improved patient satisfaction and has a positive effect on staff performance...
References:


Cont’d
References cont’d:


