A Multidisciplinary, Multi-modal Approach to Managing Pain in Trauma Patients

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Conflict of Interest Disclosure

- Conflicts of Interest for contributor:
  - Ann Quinlan-Colwell is a paid member of the speaker bureau for non-branded education for Mallinckrodt Pharmaceuticals.

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▪Taken in part from "On Being a Scientist: Responsible Conduct in Research". National Academies Press. 1995.

Pain Management Nursing®

I remember feeling **my heart stop** when that little girl rode her pink bike in front of me and I swerved to not hit her.

After that the first thing I remember is being **really, really scared**. The air bag went off and I couldn't feel the steering wheel or brake pedal. It took me a few minutes to realize the car was stopped, but I was **really scared** that I **couldn't control** it and kept trying to control it.

Then I looked over and saw my 83 y/o mother with her head down on her chest in a strange position. When I yelled "Mama" she didn't answer. That **scared** me even more. I couldn't see my 5 y/o son in the back seat. I yelled to him and he started to **cry** "it **hurts really bad**." I **couldn't move** to help him. I told him we would be all right and asked if he was in his car seat. He said yes and somehow that made me feel better. I was **so scared** but I didn't want my son to know that I was so scared.

Next I remember the EMTs came to the car. They were so good and **re-assured** us that they would get us out and to the hospital as quickly as possible. They were **wonderful** with my son, but my mother still didn't answer anyone.

The EMTs gave us all some medication. That **helped.** My son said the pain was "a little better." That was good.

No one told me how my mother was doing. I was very **worried** about her.

I don't remember much about the ride to the hospital but I do remember being in the Emergency Room. My stomach and hips **hurt really bad** but I couldn't feel my legs and that really **scared me**. I heard someone say, "we know her, she is a **frequent flyer**, probably had **too many of the oxy's**." Then someone else said "she is always here **drug seeking**." I was **really hurt** and **mad**, but I was more **worried** about my son and mother and **scared about not feeling my legs**.

The nurse asked me what **number** my pain was and I figured that I had better tell them a really high number or I wouldn't get much of anything and I do take oxycodone every day. So I told them it was a 9.

I heard another nurse ask my son what number his pain was and **he said 4**. I thought 4 was his **favorite number** so maybe that was why he said 4 because he was **still crying that it hurt**.

Later in the hospital, I still **couldn't feel my legs** and couldn't get out of bed. I was **really scared** that maybe I shouldn't have been driving when taking oxycodone and I **did this to my son and mother**. But that made me **feel so bad and guilty** and sad that **I just wanted to sleep.** The **only thing that helped** was the "D" medication

A nurse brought my son to see me and **that was good, but I felt really bad** because he had a terrible cut across his cheek and his legs were in casts. I thought "**what did I do to my baby?"**

When I asked about my mother, the nurse said that she seemed to be doing ok but her **dementia** made it hard to tell. I told her that Mama didn't have dementia and she said, "yes she does, you just didn't pay attention."

Then she said that Mama was **restless and combative**. I figured that maybe she was reacting to not having her **glass of vodka every night**, so told the nurse. She asked how many glasses. I told her just one but it was straight vodka & pretty tall. I **hated to have to tell her,** but I was **scared** that they **needed to know**.

Then they told me that they would have to **amputate my right leg** because it had been too long without blood in it. They did that 2 days later and it was the **worst pain** I ever had.

I **still have terrible phantom pain** and the medicines only help a little bit.

The nurses and therapists in rehab were probably really good but they **seemed so mean**. They kept telling me that I just had to **deal with the pain** and get moving. I really think that **I would have done better if my pain was better controlled**, but I guess they thought I was still **drug seeking**.

Importance of Managing Pain

- Ethical principles beneficence & non-malfeasance
- Legal ramifications
- Avoid untoward systemic effects
  - Increase cardiac workload
  - Impaired pulmonary function (Shallow breathing)
  - Increased stress
- Encourage participation in recovery process
- **Poorly manage acute pain leads to chronic pain!**

Long Term Functional Prognosis

- Poorly/inadequately treated acute pain often results in chronic pain
- Phantom pain
- Neuropathic pain
- Disabled
- Victim
- Cascade of emotional, social, physical limitations

Challenges to Adequate Pain Management in Trauma Patients

Types of Pain

- Acute
  - Somatic
  - Visceral
- Chronic
  - Somatic
  - Visceral
- Neuropathic
- Combinations

Unique Aspects of Acute Pain in Trauma Patients

- Not anticipated
- No preparation
- Often complicated by nerve involvement
- Often superimposed on chronic pain
- Intense emotional response
- Grief response – often intense

Challenges of Managing Pain in the Patient with Polytrauma

Competing Priorities

- HCPs competing concerns regarding:
  - Assessment
  - Stabilization
  - Masking symptoms
  - Feeding addiction

  vs.
- Patient comfort and satisfaction

Patient Expectations

- Patients expect rapid management of pain
- When pain needs are met as expected, patients are satisfied (Fosnocht et al, AJEM, 2001)
- The big expectation:

Patients Suspected of "Drug Seeking"

- **Possible** underlying issues:
  - Chronic pain
  - Pseudo addiction
  - Psychiatric Disorder
  - Substance Abuse
- **Danger:** is missing physical pathology that is potentially life threatening
  - McNabb et al Study 57% of those admitted & 13% of those discharged from ED **did** have organic pathology

Paradigm Shift

Paradigm Shift Foundation

- Change of perspective
  "Comfort Seeking"
- Identification of sound Multi-modal analgesia
- Education
- Engagement
  - Health care systems
  - Health care providers
  - Patients and families
- Financial and governmental support
- Utilize Professional Organization Guidance

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Guidelines for Health Care Providers

- Centers for Disease Control (CDC)
- American Pain Society
- American Society of Anesthesiologists
- American Society for Pain Management Nurses
- American College of Emergency Physicians
- Standardized Prescribing practices
  - Provisions for individualization
  - Order set design
  - Schedule vs PRN
  - "Not Dosing to Numbers"

American College of Emergency Physician Principles for Pain Management

ACEP Principle #1

"ED patients should receive expeditious pain management, avoiding delays such as those related to diagnostic testing or consultation."

(Todd, 2005, p. 768)

ACEP Principle #2

"Hospitals should develop unique strategies that will optimize ED patient pain management using both opioid and non-opioid medicines."

(Todd, 2005, p. 763)

ACEP Principle #3

"ED policies and procedures should support the safe utilization and prescription writing of pain medications in the ED."

(Todd, 2005, p. 763)

What is Multimodal Analgesia??

Combining various medications that have different mechanisms of action, side effects and non-pharmacological techniques, with the **goal** to best manage pain.

Why use multiple methods?

Less of each medication is used.

Benefit is maximized!

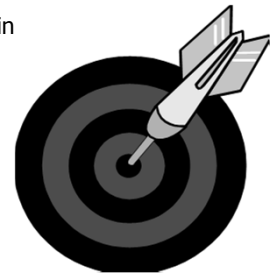
Side effects are minimized.

General guideline

Target the cause of pain

Consider the specific type of pain being treated.

CRITICAL ELEMENT:
Acute **Pain is a SYMPTOM**



Maximizing Pain Outcomes

- "The treatment of pain is dependent upon the physician's accurate assessment of the patient's pain." (Miner, et al, 2006)
- Under assessed pain leads to under treated pain. (Miner, et al, 2006)

Fully Assess
Each
New
Report of Pain

Pain Assessment

- **Acute pain is a symptom**
- Essential to know base line analgesia to:
  - adequately manage pain
  - prevent withdrawal
- Must know source of pain to determine analgesia
- Essential to know patient goal for analgesia
- Establish reasonable expectations

OLD CARTS

- **O** nset
- **L** ocation/ radiation
- **D** uration
- **C** haracter
- **A** ggravating factors
- **R** elieving factors
- **T** iming
- **S** everity

http://meded.ucsd.edu/clinicalmed/history.htm

Pt Barriers to Pain Assessment

- Cultural differences
- Pain free interval
- Fear of:
  - What the pain means
  - Addiction
  - Distracting providers from "more important care"
- Inability to communicate or poor communication
- Reluctance to complain "want to be good pt"
- Past history of inadequate analgesia resulting in pseudo-addiction

Recommendations for Managing Pain in Adult Patients Who are Unable to Self-Report Pain:

APP Assessment Guidelines

- Assess pt daily to determine if pt is able to self report pain using an appropriate pain scale.
- If pt is not able to do so, document the reason.
- ID any dz, condition & sxs known to cause pain
- Review hx & ID pre-existing conditions that cause pain and any history of chronic pain.
- ID & record **pt specific** behaviors that may indicate pt is experiencing pain
  (*Assessment must be individualized*)
- If pain is expected based upon the above, then assume this patient is experiencing pain.
- Document using the acronym APP.

- As base line analgesia: continue/ resume all analgesic Rx (or equianalgesic equivalents) pt uses for chronic or pre-existing pain.
- Address expectations for current/new pain.
- Begin an analgesic trial consistent with intensity of pain as assessed.
  - Pain expected to be **mild to moderate** consider: acetaminophen IV or scheduled 325 mg q 6 hrs via tube (VT) or rectally (PR) **Unless contraindicated.**
  - Pain expected to be **moderate to severe** consider: Morphine Sulfate 2 mg – 8 mg IV every 2 hours or expected pain or Hydromorphone 1mg – 3 mg IV every 2 hours prn for assumed or expected pain.

- When possible evaluate patient response to analgesia by assessing pt behaviors by self-report during scheduled "sedation vacation"
- Adjust analgesia & doses according to pt response.
- If pt is persistently non-responsive & it is not possible to evaluate response to analgesia, continue with same doses.
- If pain is expected to be continuous, a continuous infusion with an opioid may be most appropriate.

Re-assessment of Pain Control and Safety

Analgesia Options

Non-opioids Foundation

- acetaminophen (PO, VT, IV, PR)
- NSAIDS
- Local analgesics
  - transdermal lidocaine patches
  - liposomal bupivacaine
    - injected into surgical site
    - duration of action is up to 72 hrs
  - regional – epidural analgesia

Opioids

morphine
hydromorphone
fentanyl
oxycodone
hydrocodone
tramadol

Miner et al Study

IV	Oral
Onset ~ 8-10 mins	Onset ~ 20 mins
Median time between order and administration ~ 20.5 mins	Median time between order and administration ~ 8.5 mins
30 mins equivalent relief	30 mins equivalent relief
No difference in assessment for need of additional Rx at 40 mins	No difference in assessment for need of additional Rx at 40 mins
Greater pt satisfaction	**Less** pt satisfaction

Muscle Relaxants

- baclofen
- carisoprodol (Soma)
- cyclobenzaprine (Flexeril)
- diazapam (Valium)
- metaxalone (Skelaxin)
- methocarbamol (Robaxin)
- orphenadrine (Norflex)
- tizanidine (Zanaflex)

Neuropathic Pain

- **gabapentin**
- **pregabalin**
- **lamotrigene**

- **TCAs**
  - **amitriptyline**
  - **nortiptyline**

Non-pharm Techniques

Caring presence with intention to help

Environmental Modification

Active Attentive Listening

Relaxation Breathing

Guided Imagery

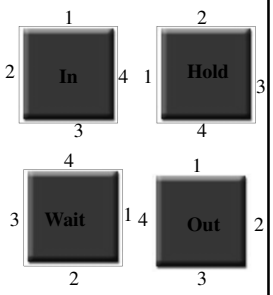
Therapeutic Touch

Massage

Verbal vs Non-verbal Communication

Square Breathing

- In 2- 3- 4
- Hold 2- 3- 4
- Out 2- 3- 4
- Wait 2- 3- 4



NHRMC Traumas

Revised Trauma Order Set Routine or STAT Physician Consults

- Neurosurgery
- Orthopedic Surgery
- Oral Surgery
- Spine Specialist
- Psychiatry
- Vascular Surgery

Revised Trauma Order Set Ancillary Consults

- Orthotist
- Nutrition
- Wound Ostomy Care
- Pain Clinical Nurse Specialist
- Substance Abuse
- Healing Arts
- Physical Therapy evaluation & treatment
- Occupational Therapy evaluation & treatment

Revised Trauma Order Set

- acetaminophen
  - IV 1000 mg q 6 hrs scheduled
  - Oral 650 mg q 6 hrs scheduled
- lidocaine patch
- Opioids
  - fentanyl
  - hydromorphone
  - morphine
  - oxycodone

Revised Trauma Order Set (con't)

- Muscle Relaxants:
  - cyclobenzaprine (Flexeril)
  - metaxalone (Skelaxin)
- Laxative scheduled

Pain Control Talking Points

- ***We will work to help you control your pain as much as possible while we keep you safe.***
- ***We need to balance pain medication with what your body needs to do to recover, especially breathing, moving, and healing.***
- ***We are trained to watch and work with you to provide the best pain care just right for you.***
- ***We will work to help you to have pain medication that is best for you.***

Talking Points continued

- ***We want your pain to be controlled as you increase activities.***
- ***The way we help you to control your pain will change as your injuries heal.***
- ***IV pain medications work fast (usually about 10 mins) but don't last very long, usually about an hour. Oral medications take longer to work (about 30 mins) but they last much longer, usually about 3 or 4 hours.***
- ***Your (or some of your) medications are ordered to be given "as needed". In order for the nurse to give them to you, you have to tell the nurse when you need.***

- **To control Trauma Pain we use medications and other tools to care for you and your injuries.**
- **Changing your position is helpful for decreasing pain.**
- **Rest, Ice, Compression and elevation (RICE) will help to reduce swelling and pain.**
- **We may use muscle relaxant medication to help decrease muscle spasms that can cause pain.**
- **We may use other medications to decrease swelling & pressure on injured areas and to reduce pain from injured nerves.**

"SMOG"

Erin Luce, RN, BSN

Safe

- *"We will work with you to balance good pain control with what your body needs to do to recover, heal and be safe."*

Medications

- *"IV pain medications work fast (approx 10 mins) but don't last long, (approx 1-2 hr). Oral medicines take longer to work (approx 30 mins) but last longer.*
- *As soon as you can take medicine by mouth you will have the oral medicines."*
- *"Some medications are ordered to be given as needed; so you have to tell the nurse you need them."*

Medications continued

- *"In addition to opioids, we probably will use a combination of medications to reduce your pain:*
  - *acetaminophen*
  - *musculoskeletal pain meds: (ibuprophen, ketorolac, etodolac, duloxetine)*
  - *neuropathic pain meds: gabapentin, pregabalin, amitriptyline*
  - *muscle relaxants*
  - *local analgesics: lidocaine patches , infusion or gel*
- *"The ways we help you control your pain will change as your injuries heal & activities increase."*

Other Therapies include:

- *Change your position or elevate painful areas*
- *Rest,* Ice, Compression and Elevation (RICE) will help to reduce swelling and pain
- *A heating pad may be helpful if your doctor says it is ok*
- *There is a TV station that may help you relax*
- *We have an advanced practice nurse who specializes in pain management*
- *We have a Healing Arts staff who can help you manage pain in other ways*

Goal

- *What is your goal for good pain control?"*
- Discuss realistic goals for pain in terms of function and activities

Challenges:

- Remaining open to patient analgesia needs
- Remain non-judgmental
- Need research with trauma pain
- Hardwire: "Comfort Seeking"