

Management of Pain & Depression Related to Pressure Ulcers

Jane R. Mort, PharmD, FASCP
Professor of Pharmacy Practice
College of Pharmacy
South Dakota State University

1/2010

Objectives

- Describe pain that often accompanies pressure ulcers.
- Discuss the efficacy and side effects of analgesics in the elderly population.
- Outline a strategy for managing pain associated with pressure ulcers.

Pain



What comes to mind when you think of your child's skinned knees?



Do you think this might be painful?



<http://health-pictures.com/Decubitus-ulcer.htm>

What do we know about pain?

International Association for the Study of Pain (IASP)

- "Possibly the most feared sensation in life."
- Defined
 - "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."
- Pain is a "personal and subjective experience"

Gunes. Ostomy Wound Management 2008;54:56.

Excerpts from a qualitative study by Rastinehad

- Study group
 - 7 female, 3 male
 - 30 to 90 y/o
 - 8 had pre-existing PU, 2 developed PU in hospital
 - 7 had Stage II, 2 had Stage III, 1 had Stage IV
- "Its like the skin, almost like you skidded on the pavement, you know, like when you're a young kid and skidded your knee on the cement. I played a lot of sports and if I fell or skidded or slide, or you know, like say you're sliding into base or that type thing, you know when you're in high school, and you got the burn."
- "That's all I felt. It was burning, BURNING. It was like somebody taking , like a hot poker and sticking it to you."

Rastinehad. J Wound Ostomy Continence Nurs 2006;33:252.

Sometimes our care causes pain

- "...when they drag you across the rough mattress, I can't describe it. It's about the worst pain I ever had...I was hurting and I told them, "watch my back." They don't listen. I said, "it's not you laying here in this bed, it's me." I felt mean. I'd like to kick the hell out of them. I think a few more minutes and that's what would have happened."
- "It [dressings] would stick to it, and like I said, there were other ladies [nurses] trying to take them off and they were hurting me. I would say, GOD that hurts so bad, don't touch me..."

Rastinehad. J Wound Ostomy Continence Nurs 2006;33:252.

What do we know from a quantitative standpoint about Pressure Ulcers and Pain?

- Gunes studied 47 patients having at least 1 Pressure Ulcer
 - 61.7% male, 38.3% female
 - Age mean 60.1 y/o (38-72)
 - Primary diagnosis - 58% neurologic

Ulcers

| Ulcer Stage | Percentage |
|-------------|------------|
| 1 | 13% |
| 2 | 32% |
| 3 | 55% |

Stages

| Ulcer Stage | Percentage |
|-------------|------------|
| II | 68% |
| III | 19% |
| IV | 13% |

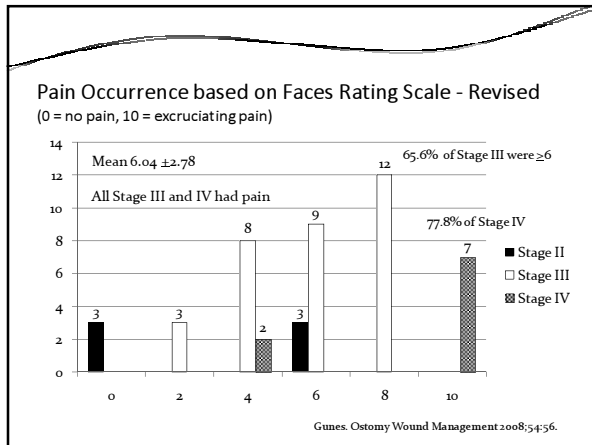
Gunes. Ostomy Wound Management 2008;54:56.

Treatments Provided

Gunes et al study

- Air mattress – 93.6%
- Honey-based hydrocolloid dressing 34%
- Hydrogel dressing 31.9%
- Hydrocolloid dressing 14.9%

Gunes. Ostomy Wound Management 2008;54:56.



Frequency

- **Treatment** - 6 patients (12.8%) were given pain meds within 6 hours prior to completing the questionnaire
- **Pain Incidence** - 93.6% reported pain (44 of 47)
- **Timing of pain**
 - 87.2% no typical time for pain
 - 68.1% noted pain with dressing changes
 - 19.1% pain with movement
- **Intermittent or Persistent**
 - Continuous 59.6%
 - Intermittent more frequent reported for Stage II
 - Continuous more frequently reported with Stage III or IV

Gunes. Ostomy Wound Management 2008;54:56.

Description of Pressure Ulcer Pain

| Stage II | | Stage III | | Stage IV | |
|-------------|-----|-------------|-----|-------------|-----|
| 3 pts | | 32 pts | | 9 pts | |
| Hot-burning | 52% | Hot-burning | 56% | Hot-burning | 67% |
| Throbbing | 38% | Tender | 52% | Throbbing | 53% |
| Sharp | 32% | Stabbing | 48% | Heavy | 52% |
| Aching | 28% | Sharp | | Sharp | |
| | | Shooting | | Aching | 46% |
| | | Throbbing | 36% | Stabbing | |
| | | Heavy | 23% | Splitting | 33% |
| | | Aching | | Tender | 31% |
| | | | | Gnawing | |
| | | | | Exhausting | |
| | | | | Punishing | |
| | | | | Fearful | |

Gunes. Ostomy Wound Management 2008;54:56.

How do these results compare to other findings?

- **Prevalence** - Large studies (>100 pts) - 37-66%
- **Tool** - Studies with valid and reliable tools showed a higher incidence of pain
- **Pain associated with treatments**
 - 34.8% - 23 pt - Spilsbury et al
 - 87.5% - 32 pts - Scrand Bourguignon
 - 68.1% - 47 pts - Gunes et al
- **Constant pain**
 - 12% - 186 pt - Eriksson et al
 - 55% - 20 pt - Quirino et al
 - 59.6% - 47 pts - Gunes et al
- **Relationship to stages**
 - 4 of 6 studies examining pain - higher the stage, higher pain scores
 - One other researcher also found the number of terms used to describe the pain increased with the stage (Scrand Bourguignon)
- **Pain intensity** - Mean pain on 10 pt scale
 - 5.8 - Quirino et al
 - 6.0 - Gunes et al

Girouard. Ostomy Wound Management 2008;54:30.
Pieper et al. Ostomy Wound Management 2009;55:16.

Five Points to Consider when Managing Pressure Ulcers

1. Pressure ulcers are painful
2. Pain levels must be routinely evaluated
3. Use pain assessment tools that have been shown effective in evaluating this type of pain
 - MPQ (McGill Pain Questionnaire)
 - FRS (Faces Rating Scale)
 - VAS (Visual Analog Scale)
 - Make sure to match the tool with the cognitive level of the pt
4. Wound care treatments can cause pain
 - Consider comfort and frequency of dressing change
5. Pain meds can affect appetite and taste

Pieper et al. Ostomy Wound Management 2009;55:16.

MedQIC resources on Pain

- **Tools: MDS Pain Intensity Scale Guide**
 - Relates common tools to MDS 2.0 scoring
- **Tools: Pain Management Pocket Tool**
 - Quick guide to principles of pain management and treatment

Pathophysiology of PU Pain

- Skin has most sensory receptors
- Pain caused by:
 - Inflammation, damaged nerves, infection, dressing changes, debridement...
- Damage causes release of chemicals that irritate nerves (nociceptive)
- Tissue injury may damage nerve terminals themselves
- Hyperalgesia (heightened sensitivity to pain) in tissues surrounding the PU
- Infection can irritate nerves

Pieper et al. Ostomy Wound Management 2009;55:16.

Pain Management: Issues to Consider

- Pain can decrease appetite and compromise nutrition
- Pain may keep a patient from wanting to move
 - Either on their own or by staff
- Pain decreases quality of life
- Pain may cause the person to act out (especially if non-communicative) – leading to use of psychotropic agents and potentially sedation
- 83% of nursing home residents can report pain intensity
- Be aware of what pain looks like in the person unable to communicate pain issues
 - Groaning, grimacing, clenching jaw, increased heart rate or BP, depressed, difficulty sleeping

State Operations Manual. Interpretive Guidelines. F309. 2009.

Pressure Ulcer Pain is Often Not Treated

- Szor and Bouguignon
 - 32 pts
 - 75% had moderate to severe pain
 - 6% received pain meds
- Dallah et al.
 - 132 pts
 - 59% had pain
 - 2% received pain meds
- Gunes et al.
 - 47 pts
 - 93.6% had pain
 - 12.8% received pain meds

Pieper et al. Ostomy Wound Management 2009;55:16.
deLaat et al. J Clin Nursing 2005;14:464.
Gunes. Ostomy Wound Management 2008;54:56.

Principles in Pain Management

- American Geriatrics Society Panel on the Pharmacological Management of Persistent Pain in Older Persons
 - JAGS 2009 July 1; E-pub ahead of print
- State Operations Manual – Interpretive Guidelines
 - F309 – Quality of Care
 - 2009
 - Addresses pain management

Acetaminophen

- 1st line for mild to moderate pain
- Efficacy – similar to NSAIDS but no anti-inflammatory effect
- Concern – Liver effects
 - Known to cause acute liver failure (ALF) in overdose
 - Most common drug associated with ALF in US - 42%
 - 28% - 1998
 - 51% - 2003

Larson et al. Hepatology 2005;42:1364.

Acetaminophen - ALF

- 48% unintentional

Of those with unintentional ALF associated with acetaminophen

- 62% single product
- 63% APAP/narcotic product
- Median dose = 7.5 g/dy
- 85.5% < 7 days

Larson et al. Hepatology 2005;42:1364.

Acetaminophen and LFTs

- Study compared acetaminophen to placebo in terms of LFT changes - 145 pts
 - 14 days treatment
 - 4 g/dy

| | | | | |
|--------------|---------------------|-------------------------|--------------------|-----------|
| Placebo (39) | APAP Oxycodone (27) | APAP Hydromorphone (27) | APAP Morphine (26) | APAP (26) |
|--------------|---------------------|-------------------------|--------------------|-----------|

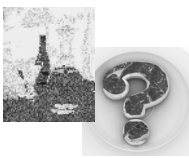
- LFT > 3X Normal

| | | | | |
|----|-----|-----|-----|-----|
| 0% | 41% | 44% | 31% | 38% |
|----|-----|-----|-----|-----|

Watkins et al. JAMA 2006;296:87.

Known risk factors for Acetaminophen Related Liver Problems

- Poor nutrition
- Dehydration
- Liver disease



Barber et al. Drug Safety 2009;32:457.

FDA Advisory Committee

- June 2009
- 37 - MD and other experts
- Voted to support 625 mg/dose maximum
- Voted 20-17 to eliminate prescription combination products

FDA has not made any changes at this time

Acetaminophen Dosing Issues

- Don't exceed 4 g/dy
- Be aware of all sources
- Know how much acetaminophen is in combination products


Contraindications

- Liver failure

Cautions

- Hepatic insufficiency
- Chronic alcohol abuse or dependence


NSAIDs



- Effects
 - Analgesic
 - Anti-inflammatory
 - Anti-platelet
 - Anti-pyretic
- Concerns
 - ADR hospital admits for pt ≥ 65 y/o - 23.5% involved NSAID
 - Largest # ADRs due to GI bleed
 - Increase risk 3 fold vs non-user
 - Frail elderly already at greater risk - 5-6 fold greater than non-institutionalized
 - GI ADRs Increase in frequency and severity with age
 - GI problems more common when NSAID combined with ASA

AGS Panel 2009
Nikolaus et al. Drugs Aging 2004;21:19.

NSAID – GI effects



- Mechanism
 - Direct irritation
 - Decrease protective prostaglandins
- COX-2 have less but can still cause
- Prevention in older adults (according to AGS Panel)
 - Nonselective agents
 - Proton Pump Inhibitor
 - Misoprostol
 - Selective COX-2 with ASA
 - Proton Pump Inhibitor
 - Misoprostol
 - Selective COX-2 in high risk patients
 - Proton Pump Inhibitor


Barber et al. Drug Safety 2009;32:457-
AGS Panel 2009

NSAID GI – Box Warning

NSAIDs cause an increased risk of serious gastrointestinal adverse events including bleeding, ulceration, and perforation of the stomach or intestines, which can be fatal. These events can occur at any time during use and without warning symptoms. Elderly patients are at greater risk for serious gastrointestinal events.

Micromedex 2009

NSAID - Cardiovascular




- Increased cardiovascular events
- Mechanism
 - Prostacycline – inhibits platelet aggregation
 - Thromboxane A2 – increases platelet aggregation
- Nonselective agents decrease both
- COX-2 selective just decrease prostacycline
- Warning on NSAIDS
 - *NSAIDs may cause an increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke, which can be fatal. This risk may increase with duration of use. Patients with cardiovascular disease or risk factors for cardiovascular disease may be at greater risk.*

Micromedex 2009

NSAID - ADRs

- Hypertension
- Edema
- Worsening Heart Failure
- Renal dysfunction
 - Pts at risk
 - Heart failure
 - Liver dysfunction
 - Diabetes
 - Renal dysfunction
 - Diuretic use
 - Check Cr in first several weeks.
- Liver dysfunction
- Cognitive changes



Micromedex 2009
Barber et al. Drug Safety 2009;32:457.

When to use NSAIDs

(AGS Panel recommendations 2009)

- “Considered rarely, and with extreme caution, in highly select individuals”
- Pt selection:
 - Safer alternatives failed
 - Goals not met
 - With continued assessment for efficacy and ADRs
- Contraindications
 - Active Peptic Ulcer Disease
 - Chronic Kidney Failure
 - Heart Failure
- Relative contraindications
 - Hypertension, H. pylori, history of peptic ulcer disease, corticosteroids

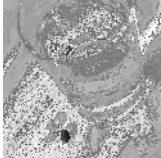
NSAIDs – Aspects to Consider

- Smallest effective dose for shortest time
- Don't combine:
 - COX-2 with nonselective
 - Ibuprofen with ASA
 - Actually increased mortality
 - FDA warning in 2006
- Drug-Drug Interactions:
 - Antihypertensive agent
 - ACE Inhibitor
 - Diuretics
 - Anticoagulants
 - Lithium

Barber et al. Drug Safety 2009;32:457
Micromedex 2009; AGS Panel 2009

Opioids

- Moderate – Severe Pain
- Efficacy
 - Pts often report that the pain is not eliminated but its unpleasantness is lessened



Opioid Adverse Effects

- Respiratory
 - Respiratory depression
 - Respiratory center is less sensitive to CO₂
 - Leads to decreased respiratory rate
 - More common if have an underlying respiratory problem
 - Reversed with naloxone
 - Suppress cough reflex
- Orthostatic hypotension
 - Morphine causes arterial and venous dilation
- Constipation* †
- Sedation *
- Nausea/Vomiting*
- Urinary retention
- Pruritus

* Most common
† No tolerance


Pharmacotherapy: A Pathophysiologic Approach 2008.

Opioid Adverse Effects

- Hallucinations
- Confusion
- Loss of cognition
- Increase risk for fractures

Pergolizzi et al. Pain Practice 2008;8:287.

Propoxyphene



- AVOID
(Not on AGS Panel list)
- Concern with death
 - 5.6% of all drug related deaths involve propoxyphene (1981-1999)
 - 38.6% with propoxyphene were accidental
- Norpropoxyphene (metabolite)
 - Cardiac toxicity
 - Does not respond well to Naloxone
- Maximum dose – 600 mg/dy
- Black Box Warning on potential for overdose

Mort et al. SD Med 2009;62:433.

Propoxyphene – Questionable Efficacy

- Some researchers have found that Propoxyphene/acetaminophen is no better than acetaminophen
- FDA Advisory Committee voted 14-12 to withdraw (March 2009)
- FDA then: (July 2009)
 - Asked for more efficacy testing
 - Increased label warning of overdose
 - Required medication guide to patient on importance of taking as directed

SD Propoxyphene Use

- 7.1% of Medicare Patients 65 y/o or older *
 - April – September 2008
- 6.8% National Medicare Sample - 1998
- Dosing based on prescription orders is often too high†
 - Medicaid population
 - May – November 2007
 - Propoxyphene N/APAP 100/650
 - 49.2% exceeded 600 mg/dy

* Medicare ≥ 65 y/o - SDFMC data
† Mort. SD Medicine 2008;61:294.

Darvocet N-100®
1-2 tablets every 4-6 hours
UNACCEPTABLE

- Darvocet N-100® contains
 - 100 mg Propoxyphene napsylate
 - 650 mg Acetaminophen

IN 24 HOURS

- 2 every 4 hours = 7,800 mg Acetaminophen
 = 1200 mg Propoxyphene

LIMIT to 6 tablets in 24 hours

Micromedex 2009

Tramadol

- Not on AGS Panel List
- Less effective than other opioids
- Causes drowsiness, nausea like others
- Decrease dose:
 - Renal function
 - < 30 ml/min – q 12 hrs and maximum 200 mg
 - > 75 y/o
 - Maximum 300 mg
- Has potential to produced seizures
 - Avoid if seizure history

Barber et al. Drug Safety 2009;32:457.
 Nikolaus et al. Drugs Aging 2004;21:19.

Codeine

- Limited effectiveness
- Not on AGS Panel list
- Some patients don't respond at all!
 - Don't convert codeine to the active form
 - 7-10% Caucasians
 - 1-2% Asians
- Has a ceiling effect on analgesia
- Nausea and constipation more than morphine

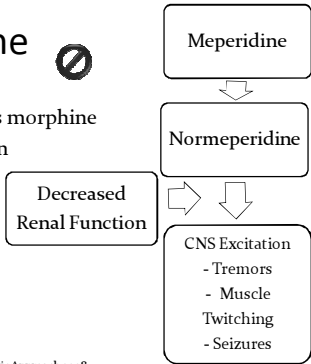
Barber et al. Drug Safety 2009;32:457.
 Pharmacotherapy: A Pathophysiologic Approach 2008.

Methadone

- Problem
 - Analgesic duration is much shorter than half-life
 - Can be very dangerous
- Prescriber must be very familiar with pharmacokinetics (AGS Panel recommendation)

Meperidine

- Avoid
- Not as potent as morphine
- Shorter duration
- Metabolite



```
graph TD; Meperidine --> Normeperidine; Normeperidine --> CNS_Excitation["CNS Excitation<br/>- Tremors<br/>- Muscle Twitching<br/>- Seizures"]; Normeperidine --> Renal["Decreased Renal Function"]; Renal --> Normeperidine;
```

Pharmacotherapy: A Pathophysiologic Approach 2008.

Agents included in AGS Panel List

- Hydrocodone (Lortab®, Vicodin®)
- Oxycodone (Percocet®, Oxycontin®)
- Morphine
- Hydromorphone (Dilaudid®)
- Methadone - only by those experienced with the agent
- Oxymorphone
- Fentanyl (Duragesic®)

Use of Opioids (AGS Panel)

When to consider use:

- Moderate to Severe Pain
- Pain impairs function
- Pain impacts quality of life

- If continuous pain, use around the clock
- Have a short acting agent available for breakthrough pain
- Anticipate and assess for efficacy and adverse effects

Summary

- Patients with pressure ulcers often have pain
- Be sure to assess for pain
- There are no specific guidelines for managing pain with pressure ulcers
- Many options exist but require evaluating the resident's status to weigh the risks versus benefits
- Monitor closely for adverse effects
- Evaluate routinely for effectiveness of pain treatment

