BASIC PAIN MANAGEMENT FOR CLINICIANS: Principles and Practicalities

ACGME Competencies Project

Palliative Care Program

9/17/04

LEARNING OBJECTIVES

- Identify barriers to adequate pain management
- Illustrate differences between dependence, tolerance, addiction, and pseudo-addiction
- Understand the 3-Step WHO guidelines
- Prescribe proper doses of opioids and adjuvants
- Anticipate and treat potential side effects

GOALS OF PAIN MANAGMENT

- Rx acute pain aggressively; prevent chronic
- Identify and address the cause of pain
- Rx chronic pain systematically / thoroughly
- Maintain alertness and function
- Allow emergence of feelings other than pain
- Intervene as noninvasively as possible

COSTS OF UNCONTROLLED PAIN

- Increased morbidity; decreased quality of life
- Extended length of stay
- Increased emergency department visits
- Increased unplanned office visits
- Repeat hospital admissions
- Lost income and insurance coverage

Barriers to Pain Management

- Under reporting and under recognition
- Fear about addiction
- Physician misinformation:
  - respiratory depression with the use of narcotics
  - pain treatment masking diagnostic data
  - addiction
  - legal risks

ACUTE PAIN

- Well-defined temporal onset
- Autonomic nervous system activity
- Recognize and address underlying cause
- Individual needs may vary
- Prophylactically treat painful procedures

CHRONIC PAIN

- Poorly defined temporal onset
- No signs of autonomic hyperactivity
- Associated with signs and sx of depression
- Underlying cause may not be treatable
- Analogy to a nightmare
- Treat aggressively once identified

Physical Dependence

- Inevitable neurophysiologic changes from exogenous opioids
- Withdrawal results in tachycardia, hypertension, diaphoresis, piloerection, nausea and vomiting, diarrhea, body aches, abdominal pain, psychosis, and/or hallucinations
- Physical dependence is not evidence of addiction

Tolerance

- Reduced effectiveness over time
- Tolerance to side effects is common and favorable
- Tolerance to analgesia is rarely clinically significant
- When increasing doses required, suspect worsening disease rather than tolerance

Addiction

- Psychological dependence
- Compulsive drug use despite harm
- Non-adherence to a therapeutic regimen
- Differentiate from under-treatment of pain, criminal drug diversion, and family dysfunction

Pseudo-addiction

- Mimics addictive behavior, but is due to the under treatment of pain
  - hoarding medication
  - seeking prescriptions from multiple providers
  - repeatedly requesting more medication
- Behavior disappears with proper treatment

PAIN TREATMENT
Analgesic Guidelines

- Utilize WHO / AHCPR step care
  - Mild pain (1-3): Step 1- NSAID's; acetaminophen
  - Moderate pain (4-7): Step 2-mild opioids, combo
  - Severe pain (8-10): Step 3- stronger opioids
- For moderate to severe pain
  - Give baseline medications around-the-clock
  - 10% total daily dose as prn
    - q 1-2 h for oral; q 30-60 min for parenteral
    - If >2 prn's/24 hours, increase baseline by total of prn's

WHO 3-Step Ladder

3 Severe

- Morphine
- Hydromorphone
- Methadone
- Levorphanol
- Fentanyl
- Oxycodone
- ± *Adjuvants*

2 Moderate

- A/Codeine
- A/Hydrocodone
- A/Oxycodone
- A/Dihydrocodeine
- Tramadol
- ± *Adjuvants*

1 Mild

- ASA
- Acetaminophen
- NSAIDs
- ± *Adjuvants*

PAIN TREATMENT
Analgesic Guideline Caveats

- Utilize least invasive route possible:
  - Oral route preferable; concentrate sublingually
  - Transcutaneous > subcutaneous > intravenous
- Converting from one opioid to another:
  - Calculate equianalgesic dose
  - Reduce by 30-50%
  - Calculate new baseline and prn doses

PAIN TREATMENT
Analgesic Guideline Caveats

- Pain severe despite of baseline and prn's
  - Add total of prn's to former baseline
  - Increase total by 25-50% to calculate new baseline
  - New prn will be 10% of new total
- 1/2 usual starting doses for special populations
  - Renal or hepatic disease
  - Geriatric patients
- Stabilize with short-acting before long-acting
- Sedation most common in opioid naïve

Pain Treatment with Opioids: Indications for Changing

- Variation between patients
- Ineffective despite increasing dose (rapid tolerance)
- Dose-limiting side effects
- Loss of prior route

PAIN TREATMENT
Anticipate Opioid Side Effects

- Constipation
  - Prophylactic treatment better than prn
  - Stool softener: Colace (docusate)
  - Bowel Stimulants: Senokot (senna)
    Dulcolax (bisacodyl)
  - Hyperosmolar: Lactulose, Miralax
  - Oral naloxone (enteric opioid antagonist)
  - Avoid bulk laxatives

PAIN TREATMENT
Anticipate Opioid Side Effects

- Sedation
  - Tolerance usually develops in 24-72 hours
  - Appears well before respiratory depression
  - Decrease dose or increase interval
  - Consider amphetamines
  - Avoid naloxone if possible (withdrawal)

PAIN TREATMENT
Special Situations

- Anxiety and depression
  - Don't over-normalize or over-pathologize
  - Usual treatments work
  - Special role of dextroamphetamine
- Neuropathic pain
  - Tricyclic antidepressants >> SSRI's
  - Anticonvulsants - Neurontin
  - Mexiletine

PAIN TREATMENT
Special Situations: Unique Routes

- Invasive options (for well-localized pain)
  - Intraspinal (epidural or intrathecal) opioids
  - Nerve blocks, ablation, transection
  - Anesthesiologists who specialize in pain
  - Radiation therapy; surgery
- Patients who lose ability to swallow
  - Oral concentrate > transdermal > SQ > transrectal
  - Utilize usual dose conversion strategies

PAIN TREATMENT Conclusions

- Patients are expert about their own pain
- Pain can almost always be relieved
- For unrelieved moderate or severe pain:
  - Follow WHO Pain Guidelines
  - Baseline dose at proper interval
  - PRN for breakthrough at 10-15% total dose
- Get help for difficult cases
  - Pain or palliative care specialists

CASE PRESENTATION

- 75 year old woman with metastatic ovarian cancer
- Admitted for experimental chemotherapy
- Not “ready” for hospice
- Usual pain “severe” rated 8/10
- Current medication, Percocet (5/325) 2 tabs q4h
- Why not just increase the dose of Percocet?

Using the Equianalgesic Table, calculate an equivalent amount of oral morphine to 2 Percocet (5/325) q4h; select a new baseline.

A. 10 mg MS q4h atc

B. 15 mg MS q4h atc

C. 20 mg MS q6h atc

D. 30 mg MS q6h atc

E. I am not sure; I need help.

Using the Equianalgesic Table, calculate an equivalent amount of oral morphine to 2 Percocet (5/325) q4h; select a new baseline.

- 2 tabs Percocet q4h = 12 tabs/day
- 12 tabs x 5 mg oxycodone/tab = 60 mg/day
- 60 mg oxycodone = 90 mg oral morphine
- Increase baseline by ~1/3 (poorly controlled) but decrease by ~1/3 with med change
- 90 mg / 6 doses = 15 mg q4h oral morphine

Now, based on the 15 mg MS q4h atc dose, calculate the appropriate prn dose.

A. 5 mg MS q1h prn

B. 10 mg MS q1h prn

C. 15 mg MS q2h prn

D. 20 mg MS q4h prn

E. I am not sure

Now, based on the 15 mg MS q4h atc dose, calculate the appropriate prn dose.

- 15 mg MS q4h = 90 mg MS per day
- PRN dose is 10% of total daily dose
- PRN interval for oral is q1-2h

- PRN is 10 mg q1h

Based on your intervention (15mg q4h atc), her average pain is down to 6/10. She has taken 6 additional prn doses of 10 mg each in 24 hours. Calculate a new baseline and prn.

Baseline

A. 20 mg MS q4h atc

B. 25 mg MS q4h atc

C. 30 mg MS q6h atc

D. 40 mg MS q6h atc

E. I still don't get it

Based on your intervention (15mg q4h atc), her average pain is down to 6/10. She has taken 6 additional prn doses of 10 mg each in 24 hours. Calculate a new baseline and prn.

PRN

A. 10 mg MS q1h prn

B. 15 mg MS q1h prn

C. 20 mg MS q4h prn

D. 25 mg MS q4h prn

Based on your intervention (15mg q4h atc), her average pain is down to 6/10. She has taken 6 additional prn doses of 10 mg each in 24 hours. Calculate a new baseline and prn.

- Total daily dose is 90 mg + 60 prn = 150 mg
- New baseline is 150 / 6 doses = 25 mg q4h
- New prn is 10% of 150 mg = 15 mg q1h prn

On 25 mg MS q4h, her pain is now 3/10 on average. She has taken only 1 prn. Choose a long-acting morphine dose and prn.

- Total 24 hour atc dose is 150 mg MS
- Baseline 75 mg MS Contin bid

  (1 - 60 mg tab and 1 - 15 mg tab bid)
- PRN remains the same - 15 mg MSIR q1h prn

  (3cc of 5 mg/cc liquid or 15 mg MSIR tablet)

After 2 months of good pain control, enrolled in hospice, she develops acute back pain (10/10) and vomiting. Calculate an equal amount of parenteral morphine (increased by 1/3) and an hourly rate.

A. 1 mg/hr

B. 3 mg/hr

C. 5 mg/hr

D. 7 mg/hr

E. I am not sure

After 2 months of good pain control, enrolled in hospice, she develops acute back pain (10/10) and vomiting. Calculate an equal amount of parenteral morphine (increased by 1/3) and an hourly rate.

- 30 mg oral morphine = 10 mg of IV morphine
- Total dose of 150 mg po = 50 mg IV
- Increase by ~1/3 = total daily dose of 70 mg
- Divide by 24 to get an hourly rate = 3 mg/hr

Assuming a 3 mg/hour rate, now calculate a new prn morphine dose

A. 3 mg q30 minutes prn

B. 7 mg q30 minutes prn

C. 10 mg q2h prn

D. 20 mg q2h prn

E. This seems like too much medicine

Assuming a 3 mg/hour rate, now calculate a new prn morphine dose

- 3 mg/hr = 72 mg per day
- New PRN is 10% daily dose = 7 mg
- Parenteral interval is q 30-60 minutes

SOME ADDITONAL QUESTIONS

- How frequently to re-evaluate the baseline?
- Are there upper limits to morphine dose?
- Additional diagnostic issues for her pain?
- Does the fact she is on hospice limit her treatment options for pain?

After several dose adjustments, and radiation therapy, her pain is 3-4 on average. Her morphine infusion is at 5 mg per hour, and she has taken one prn of 12 mg in the last 24 hours. She wants to go home off IV's. Calculate an equivalent dose of morphine concentrate (20 mg/cc).

A. 1cc q2h atc

B. 2cc q2h atc

C. 3cc q4h atc

D. 4cc q4h atc

E. Lost again

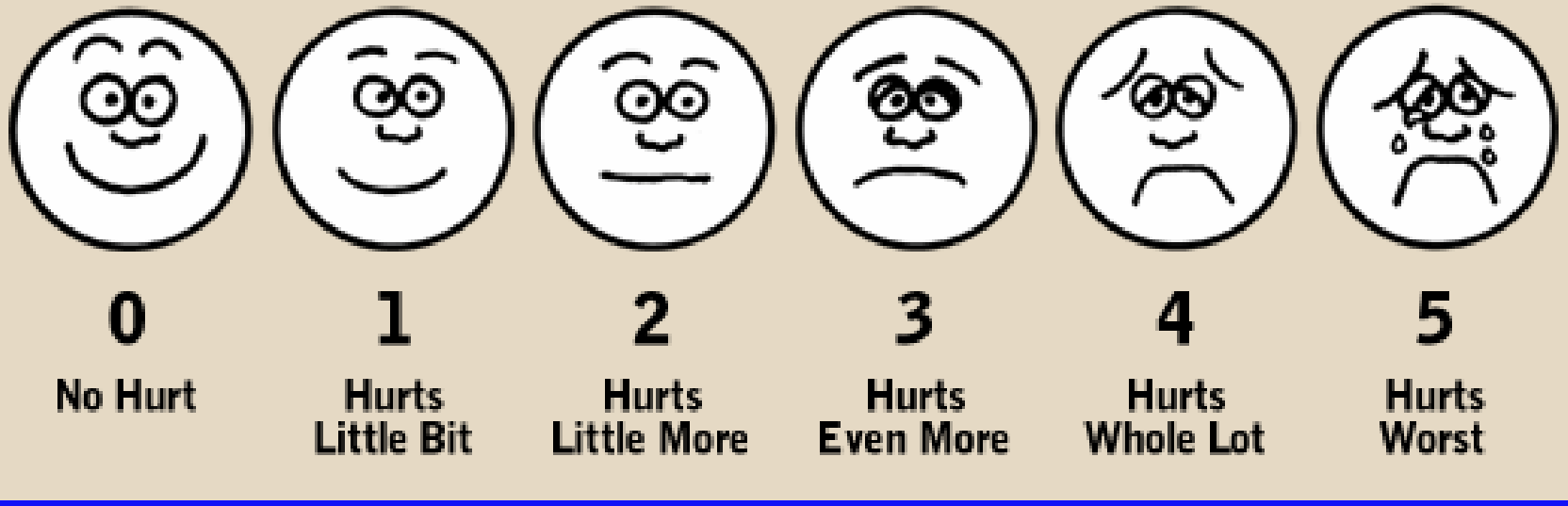
Calculate an equivalent dose of morphine concentrate (20 mg/cc).

- 5 mg/hr = 120 mg/day IV morphine
- 10 mg IV = 30 mg po morphine
- 120 mg IV = 360 mg po morphine
- 360 mg / 6 doses = 60 mg q4h
- 20 mg/cc ms concentrate = 3 cc q4h
- 10% of 360 = 36 mg q1h prn
- 36 mg = ~ 2 cc ms concentrate q1h prn

Summary

- Treat moderate to severe pain aggressively
  - Baseline meds around the clock
  - 10% total daily dose prn (q1-2h po/30-60 min IV)
  - Adjust baseline upward daily, adding prn total
- Oral > transcutaneous > subcutaneous > IV
- Reduce by 1/3 when changing meds
- Elderly, renal or hepatic disease: reduce doses!
- Under-treated pain has adverse consequences
- Get help if you need it!

Questions?


0
No Hurt
1
Hurts Little Bit
2
Hurts Little More
3
Hurts Even More
4
Hurts Whole Lot
5
Hurts Worst