Treatment of Pain
Geriatric Patient – MOA 2015

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Definition of Pain

“Pain : Bodily, Mental, or Emotional suffering as due to injury or illness”
Random House Dictionary

“Pain : Is whatever the patient defines it to be”
Margo McCaffery
Incidences of Pain

1) Almost half of all cancer patients have pain and nearly 75% of patients with advanced cancer have pain.

2) 40-50% of patients with pain have moderate to severe pain, while 25-30% have very severe pain.

3) 50-80% of cancer patients do not obtain adequate pain relief.
Barriers to Pain Management: Physician Practices

1) Misunderstanding regarding
   a) Addiction / Psychological Dependence
   b) Uncontrollable side effects

2) Questioning the genuineness of the complaint.

3) Inability to empathize with the suffering patient.

4) Failure to keep up with scientific advances.

5) Not relating pain to function.

6) Federal and State Legislation.
Barriers to Pain Management: Patient Practices

1) Believe pain is an inevitable consequence of cancer.

2) Don’t want to complain and be thought of as a "Problem Patient"

3) Don’t report pain because it is "a sign of worsening disease."

4) Patient and caregiver worried about addiction.
Etiologies of Pain

1) Organic Factors

a) Nociceptive: (Nociceptors involved)
   - Somatic (Bone, Soft Tissue, Muscle, Skin)
   - Visceral (Cardiac, Lung, GI Tract, GU Tract)
Etiologies of Pain cont...

1) Organic Factors cont...

b) Neuropathic: Direct invasion/injury to nerve

- Peripheral (Mono- and Polyneuropathies)
- Central (Spinal Cord, Brainstem, Thalamus)
- Sympathetic (RSD, Causalgia, Brachial or Sacral plexus tumor infiltration)
Etiologies of Pain cont...

2) Caused by direct disease damage
   - Tumor invasion into tissue
   - Nerve infiltration or compression
   - Inflammatory response

3) 25% of pain is caused by treatment:
   - Surgery
   - Radiation Therapy
   - Chemotherapy
   - Medications
   - PT/OT or simple movement of patient
Etiologies of Pain cont...

4) Psychosocial Influences:
   Loss of work
   Physical disability
   Fear of death
   Financial concerns
   Psychological state/lack of coping by patient or family/guilt
   Lack of family/social support
General principles of pain management

- Don’t delay treatment while assessment underway
General principles of pain management

- **Assessment**
  - Do the same way each time, what makes it better, worse, onset, etc

- **Management**
  - Pharmacologic
  - Nonpharmacologic
General principles

- Education – patient, family, all caregivers
- Ongoing assessment of outcomes, regular review of plan of care
- Interdisciplinary care, consultative expertise
General principles

- Pathophysiology
  - What is cause of symptom?
    - reasonable work-up
  - Nonphysical cause – spiritual, emotional

- Assessment
  - Use an appropriate scale
    - such as FACES, 0-10 for pain
Pain in the Elderly

1) At-risk for under-treatment of pain due to inappropriate beliefs about their pain sensitivity, pain tolerance and ability to use opioids.

2) With increased incidence of cognitive impairment, elderly may require more frequent pain assessment

- AHCPR Guidelines
Placebos

- No role for placebos to assess or treat pain
Signs/Symptoms Pain-

1) Verbal – pt states, moans, cries, yelling/combative

2) Non-verbal – loss of function, eating/sleeping poorly, agitation, change in sleep, sad, loss of interest in activities/therapy, facial grimacing

3) see list from MDS AMDA Clinical Practice Guideline
WHO 3-step Ladder

1 mild
- ASA
- Acetaminophen
- NSAIDs
- ± Adjuvants

2 moderate
- A/Codeine
- A/Oxycodone
- A/Dihydrocodeine
- Tramadol
- ± Adjuvants

3 severe
- Morphine
- Hydromorphone
- Methadone
- Levorphanol
- Fentanyl
- Oxycodone
- ± Adjuvants
Acetaminophen

- Step 1 analgesic, coanalgesic
- Site, mechanism of action unknown
  - minimal anti-inflammatory effect
- Hepatic toxicity if > 4 g / 24 hours
  - increased risk (3g in older adults)
  - hepatic disease, heavy alcohol use
**NSAIDs . . .**

- Step 1 analgesic, coanalgesic
- Can get renal insufficiency, GI bleed, platelet interference
- All have analgesic ceiling effects
  - effective for bone, inflammatory pain
  - Highest incidence of adverse events - cautious use in older adults
Step One: Non-Opioids cont...

Corticosteroids- very beneficial in EOL

1) Pain (esp. Bony) not relieved by NSAID
2) Pain and:
   - Acute nerve compression, Visceral distension, nausea, Increased intracranial pressure (eg. edema)
   - Anorexia, mood disorder, lung disease

Use Prednisone daily dosing (20-40mg) if patient can swallow or use Dexamethasone IV or SQ (4mg bid or tid) if patient cannot swallow
Step Two: “Weak” Opioids-for mild to moderate pain

- Add weak Opioid to step one Rx
  
  i.e. –  - Hydrocodone (Norco)
  - Codeine

Problem:

1) Most compounded with acetaminophen which can limit usefulness due to dose-related toxicity
Step Three: “Strong” Opioids - for moderate to severe pain

- Morphine
- Hydromorphone
- Oxycodone
- Methadone
- Levorphanol
- Fentanyl
- Meperidine
- Tramadol
Opioid pharmacology . . .

- $C_{\text{max}}$ after
  - po $\approx 1\ h$
  - SC, IM $\approx 30\ min$
  - IV $\approx 6\ min$
Routine oral dosing immediate-release preparations

- Codeine, hydrocodone, morphine, hydromorphone, oxycodone
  
  dose q 4 h

  adjust dose daily
  
  mild / moderate pain  ➤ 25%–50%
  severe / uncontrolled pain  ➤ 50%–100%

  adjust more quickly for severe uncontrolled pain
Routine oral dosing extended-release preparations

- Improve compliance, adherence
- Dose q 8, 12, or 24 h (product specific – morphine/oxycodone)
  don’t crush or chew tablets
  may flush time-release granules down feeding tubes
- Adjust dose q 2–4 days (once steady state reached)
Step Three: Strong Opioids cont...

- Morphine: = Gold Standard
  Multiple routes- oral pill and liquid, short and long-acting (once or twice a day); IV; SQ
  Give around the clock / retitrate dose often
  No max dose
  Optimal dose = Comfort with least side effects
  Often has stigma associated with name
Step Three: Strong Opioids cont...

- Oxycodone
  Similar system to Morphine, except no IV or SQ route
  No stigma associated with name

- Hydromorphone (Dilaudid)
  5 X potent than morphine orally and IV
  Good for Subcutaneous infusion (less volume)
  No long acting or liquid route
Step Three: Strong Opioids cont...

- Fentanyl (Duragesic)
  
  Patch system beneficial, especially when oral route not available
  Decreases staff family time for administration
  Difficult to titrate quickly
  Cost can be barrier for EOL care
  In cachectic patient may not be as effective
Step Three: Strong Opioids cont...

- Meperidine (Demerol)
  
  **Not indicated** for chronic pain management
  
  Toxic metabolite NOR-MEPERIDINE accumulates after a few days
  
  *(can get restlessness, delirium, seizures)*
  
  Increase incidence side effects in elderly
Step Three: Strong Opioids cont...

- Methadone
  - much more commonly used, often in terminal patients
  - good somatic and neuropathic benefit
  - very inexpensive
  - difficult to dose, but many protocols available
  - start usually 5mg bid to tid and titrate every 7 days, watch for sedation
Step Three: Additional Opioid Use

- **Tramadol (Ultrim/Ultracept)**
  
  Used frequently in United Kingdom, use here in U.S. is growing
  
  start at low dose prn or scheduled and titrate slowly (50 mg bid to start)
  
  Cost may be prohibitive in EOL care
  
  Can get delirium in elderly but much less if start low dose and titrate slowly
Dosing Pain Meds for Chronic pain

- Use around the clock long-acting opioids scheduled, not prn
- Use prn dosing for breakthrough pain with short acting opioid
- Try to limit number of opioids
Breakthrough dosing

- Use immediate-release opioids
  5%-15% of 24-h dose
  offer after C\text{max} reached
  po / pr \approx q 1 h
  SC, IM \approx q 30 min
  IV \approx q 10-15 min

- Do NOT use extended-release opioids
Clearance concerns

- Conjugated by liver
- 90%–95% excreted in urine
- Dehydration, renal failure, severe hepatic failure
  - ↓ dosing interval, ↓ dosage size
  - if oliguria or anuria
    - STOP routine dosing of morphine
    - use ONLY prn
Alternative routes of administration

- Enteral feeding tubes
- Transmucosal
- Submucosal
- Rectal
- Transdermal
- Parenteral
- Intraspinal
Bolus effect

- Swings in plasma concentration often with short acting meds
  - Drowsiness ½ –1 hour after ingestion
  - Pain before next dose due

- Must move to
  - Extended-release preparation
  - Continuous SC, IV infusion
Changing routes of administration

- Equianalgesic table
  - guide to initial dose selection
  - App for phone

- Significant first-pass metabolism of po / pr doses
  - codeine, hydromorphone, morphine
  - po / pr to SC, IV, IM
  - $3 \approx 1$
Changing opioids

- Equianalgesic table
- Transdermal fentanyl
  
  25-µg patch ≈ 45–135 (likely 50–60) mg morphine / 24 h
Nonpharmacologic pain management . . .

- Neurostimulation
  - TENS, acupuncture
- Anesthesiologic
  - nerve block
- Surgical
  - cordotomy
- Physical therapy
  - exercise, heat, cold
Nonpharmacologic pain management

- Psychological approaches
  - Cognitive therapies
    (relaxation, imagery, hypnosis)
  - Biofeedback
  - Behavior therapy, psychotherapy

- Complementary therapies
  - Massage
  - Art, music, aroma therapy
High doses of opioids

- Don’t be afraid to use
- Myoclonus may mean too high drug — treat with decrease, rotate opioid or can use benzodiazepene if pt dying
- Allodynia/Hyperalgesia can result with too high doses of opioid
Opioid Side Effects

- Sedation and Confusion (delirium)
  
  warn patient and families-should resolve in few days as patient develops tolerance to symptom

  Ritalin may counteract sedation - excellent in EOL care (5mg at 8am and noon)

  may need to rotate opioid to another

- Pruritis - Anti-Histamine may treat - Hydroxyzine
  10-25 mg bid or tid or 25-100mg qhs

- Myoclonus - Treat by decreasing dose, changing opioid or try Ativan
Opioids and Respiratory Depression

Usually only at higher doses

Usually not a problem with patients on long term opioid therapy due to tolerance

With pain abruptly relieved may get hypoventilation, can usually be prevented with physical stimulation

Use opioid antagonists cautiously

May be a benefit in terminal patients

Discuss with family
Constipation from opioids . . .

- Occurs with all opioids
- Pharmacologic tolerance developed slowly, or not at all
- Dietary interventions alone usually not sufficient
- Avoid bulk-forming agents in debilitated patients
Constipation from opioids

- Combination stimulant / softeners are useful first-line medications
  - casanthranol + docusate sodium
  - senna + docusate sodium

- Prokinetic agents
Opioids and Tolerance

Tolerance = the need to increase dose requirements over time to maintain pain relief

First indication is decrease in duration of analgesia for current dose

Happens with nearly every patient on opioids

Does not mean patient is addicted

Does mean patient needs to be weaned off Rx
Opioids and Physical Dependence

Occurs in all cases of prolonged use

Physiologic etiology

If medications not managed appropriately can get withdrawal syndrome, but this is not a sign of addiction

Less concerning with treating pain in terminal patients
Opioids and Addiction

Psychological dependence - lifestyle is geared to acquisition of drug
Patient loses control of use of drug
Use continues despite of losses
Medication does not improve quality of life, regardless of dose
Rarely occurs in terminal illness
Common areas of errors in pain management

- Writing more than one med on script
- Converting IV to po day of hospital discharge
- Not writing scripts on dc from hospital when going to facility
- Multiple narcotics use in same patient
- Poor equianalgesic dosing
Latest Updates

- Nursing homes now no longer allow physician to nurse orders for controlled substance
- Tramadol (Ultram) now considered controlled substance
- Hydrocodone now considered CII medication