OBJECTIVES

• Discuss sources of pain in the elderly patient

• Review methods for evaluating pain in the elderly patient

• Describe therapeutic regimes for the older adult
WHY IS THIS IMPORTANT?

- Pain is common in the elderly
- Pain is under-recognized and undertreated
- JCAHO, ACGME/RRC requirements
- Lack of formal education on pain control
WHY IS PAIN CONTROL OFTEN NOT OPTIMAL?

• Clinician unfamiliarity with assessment and treatment

• Misconceptions about opioids by patients, families, and clinicians
  ➢ Fear of side effects
  ➢ Concerns about addiction, regulatory reprimands, and lawsuits
SOURCES OF PAIN IN THE ELDERLY

- Degenerative joint disease
- Spinal stenosis
- Fractures
- Pressure ulcers
- Neuropathic pain
- Urinary retention
- Post-stroke syndrome

- Improper positioning
- Fibromyalgia
- Cancer pain
- Contractures
- Postherpetic neuralgia
- Oral/dental sources
- Constipation
CONSEQUENCES OF UNRELIEVED PAIN

- Sleep disturbance
- Functional decline
- Depression, anxiety
- Polypharmacy
- Malnutrition
- Prolonged hospital stay
- Challenging behaviors
- Increased healthcare utilization
- Lawsuits
AGE DIFFERENCES IN PAIN: CHANGES IN PERCEPTION

• Decrease in pain receptors at the skin are a possible mechanism, but no uniform consensus among studies.

• Regardless of number, function in pain receptors is decreased (both C and A\(\delta\))

• Conduction velocities are impaired in both myelinated and unmyelinated fibers at the CNS.

• Loss of neurons at dorsal horns has been documented.
AGE DIFFERENCES IN PAIN: CHANGES IN BRAIN PERCEPTION

• Decrease in EEG amplitude and increase in latency to painful stimuli have been reported

• Painful thermal stimuli activates midline and central cortical regions in young and old, but older adults show activation of frontal and lateral sites
  ➢ This implies wider recruitment of neurons and slower cognitive processing

• The elderly have been shown to be more reluctant than young people to report painful stimuli
AGE DIFFERENCES IN PAIN: OTHER CHANGES

• Normal aging may be associated with impairment in descending endogenous pain inhibition networks

• This suggests that adaptation to painful stimuli is reduced in the elderly with age-related dysfunction of both opioid and hormonal systems
AGE DIFFERENCES IN PAIN: PRESENTATION

• What may be painful to a young adult may present in the elderly as behavioral changes such as confusion, restlessness, aggression, anorexia, and fatigue

• When pain is reported, it may be referred from the site of origin in an atypical manner
   Example: Atypical or asymptomatic MI is rare in younger pts; in elderly survivors, 30% do not report acute symptoms, and 30% have atypical presentations

• Elderly women are more likely than elderly men to present with atypical pain
PAIN IN THE SETTING OF COGNITIVE IMPAIRMENT (1 of 2)

- The intensity of painful conditions and the administration of analgesic medication seem to be inversely related as dementia progresses.

- Patients may have difficulty expressing the experience or inability to associate the actual experience due to neuropathological changes.

- **In response to pain, cognitively impaired people might show more facial expressiveness**
  - This might be related to generalized emotional and behavioral disinhibition rather than pain per se.
PAIN IN THE SETTING OF COGNITIVE IMPAIRMENT (2 of 2)

- As dementia worsens, self-report becomes impossible and it is necessary to rely on pain behaviors and facial expressions.

- Abrupt changes in behavior and function might be the best indicators of pain:
  - Family members and frequent caregivers can aid in obtaining this information.
ONE-DIMENSIONAL PAIN SCALES

IOWA PAIN THERMOMETER
NONVERBAL PAIN INDICATORS (1 of 2)

- **Facial expressions:** grimacing
  - Less obvious: slight frown, rapid blinking, sad/frightened, any distortion

- **Vocalizations:** crying, moaning, groaning
  - Less obvious: grunting, chanting, calling out, noisy breathing, asking for help

- **Body movements:** guarding
  - Less obvious: rigid, tense posture, fidgeting, pacing, rocking, limping, resistance to moving
NONVERBAL PAIN INDICATORS (2 of 2)

• Changes in interpersonal interactions
  ➢ Combative, disruptive, resisting care, decreased social interactions, withdrawn

• Changes in mental status
  ➢ Confusion, irritability, agitation, crying

• Changes in usual activity
  ➢ Refusing food/appetite change, increased wandering, change in sleep habits
ASSESSING PAIN: NONVERBAL, MODERATE TO SEVERE IMPAIRMENT (AGS PANEL 2002)

- Presence of nonverbal pain behaviors?
  - Assess at rest and with movement

- Timely, thorough physical exam

- Ensure basic comfort needs are being met (eg, hunger, toileting, loneliness, fear)

- Rule out other causative pathologies (eg, urinary retention, constipation, infection)

- Consider empiric analgesic trial
MULTIMODAL APPROACH TO PAIN MANAGEMENT

- Pharmacotherapy
- Physical Therapy
- Complementary and Alternative Medicine
- Psychological Support
- Interventional Approaches
- Exercise

Treatment Approaches
MEDICATION SELECTION

• Good pain history

• Target to the type of pain
  ➢ Neuropathic, nociceptive

• Consider non-pharmacologic or non-systemic therapies alone or as adjuvant therapy

• Use the WHO 3-step ladder
WHO 3-STEP LADDER

World Health Organization. Technical Report Series No. 804, Figure 2.
ADJUVANTS

- Topical preparations
  - Lidocaine patch, capsaicin
- Acetaminophen
- NSAIDs
  - Celecoxib, steroids
- Anticonvulsants
- Antidepressants
- Non-pharmacologic (TENS, PT/OT)
STEP 1 (MILD PAIN): NON-OPIOIDS

- Acetaminophen
- NSAIDs
- Cox-2 inhibitors
- Non-systemic therapies
- Non-medication modalities
- ± Other adjuvants
STEP 2 (MODERATE PAIN): MILD OPIOIDS, OPIOID-LIKE

• Codeine (eg, Tylenol No. 3 with codeine)
• Hydrocodone (eg, Vicodin)
• Oxycodone (eg, Percocet)
• Tramadol (eg, Ultram)
• ± Adjuvants
STEP 3 (SEVERE PAIN): STRONG OPIOIDS

- Morphine
- Oxycodone
- Hydromorphone (Dilaudid)
- Fentanyl
- Oxymorphone
- Methadone
- ± Adjuvants
TRANSDERMAL FENTANYL

- Duration 24–72 hours
- 12–24 hours to reach full analgesic effect
- Not recommended as first-line treatment in opiate-naive patients
- Lipophilic
- Simple conversion rule:
  - 1 mg PO morphine = 0.5 mcg fentanyl
    (60 mg morphine roughly = 25-mcg patch)
OTHER FENTANYL

• Intravenous
  ➢ Equivalent to patch dose
    (eg, Duragesic 100 mcg / 72 = 100 mcg/hr IV)

• Transmucosal
  ➢ Actiq
  ➢ Fentora

• Iontophoretic fentanyl patch
  ➢ Ionsys
METHADONE (1 of 2)

• A complicated drug—should be used only by those with experience!
• Mu, kappa, delta agonist
• Inhibits reuptake of serotonin and norepinephrine
• NMDA antagonist (neuropathic pain)
• Significant inter-individual variability
• Drug interactions (Coumadin-like)
METHADONE (2 of 2)

- Initial rapid tissue distribution
- Slow elimination phase
- Long and variable half-life (13–58 hours)
- Dose interval is variable (q6h or q8h)
- Dose usually adjusted every 4–7 days
- Minimally impacted by renal disease
- Inexpensive; less street value than other opioids
DRUGS TO AVOID IN THE ELDERLY

- Meperidine
  - Demerol
- Mixed agonist-antagonists
  - eg, Pentazocine (Talwin)

Propoxyphene
- Darvon, Darvocet
OPIOID PHARMACOLOGY

- Block the release of neurotransmitters in the dorsal horn of spinal cord
- Mu, delta, kappa expressed differently, depending on opioid medication
- Conjugated in liver
- Excreted via kidney (90%–95%)
- Exception: methadone is excreted fecally
OPIOID USE IN RENAL FAILURE

• Avoid meperidine, codeine, dextropropoxyphene, morphine

• Use with caution: oxycodone, hydromorphone

• Safest: fentanyl, methadone

• Opioid dosing by creatinine clearance:
  - >50 mL/min Normal dose
  - 10–50 mL/min 75% of normal dose
  - <10 mL/min 50% of normal dose
CLEARANCE CONCERNS

• Dehydration, renal failure, severe hepatic failure:
  ↓ dosing interval (extend time)
  or
  ↓ dosage size

• With oliguria or anuria:
  ➢ Stop around-the-clock dosing of opioids
  ➢ Use only PRN
OPIOID ADVERSE EFFECTS

Common
- Constipation
- Dry mouth
- Nausea/vomiting
- Sedation
- Sweats

Uncommon
- Bad dreams/hallucinations
- Dysphoria/delirium
- Myoclonus/seizures
- Pruritus/urticaria
- Respiratory depression
- Urinary retention
- Hypogonadism
- SIADH
GI SIDE EFFECTS OF OPIOIDS

• Constipation
  - Never resolves
  - Prevent with scheduled softeners plus stimulants
  - Avoid bulking agents (eg, Metamucil)

• Nausea and vomiting
  - Encourage patients to eat frequent, small meals
  - Treat with:
    • Pro-motility agents (metoclopramide)
    • Serotonergic blocking agents (odansetron)
    • Dopaminergic blocking agents (haloperidol, metoclopramide, prochlorperazine)
SEDATION AND DELIRIUM WITH OPIOIDS

• Consider trying one of the following:
  ➢ If pain control is adequate, decrease dose by 25%
  ➢ Rotate to a different opioid preparation
  ➢ Use small dose of a psychostimulant (2.5–5 mg methylphenidate or dextroamphetamine) for excessive somnolence

• Use nonsedating antipsychotics for delirium (haloperidol, risperidone)


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