THE UNIVERSITY OF IOWA

IOWA GERIATRIC EDUCATION CENTER

INFO-CONNECT

Chronic Pain Management In Older Adults

The Facts . . .

- Approximately 60-80% of older adults report some degree of pain that interferes with life activities.
- 60-80% of nursing home residents report chronic pain.
- Pain is often undertreated in the geriatric population.
- Untreated pain in patients with dementia can lead to increased behavioral problems.
- Pain has been designated the 5th vital sign.
- 80% of people greater than 65 report regular use of an analgesic medication.

What is Chronic Pain?

Chronic non-malignant pain can be defined as pain which lasts beyond the usual time period that an injury to the body needs to heal. Thought to be 4 to 6 weeks, although some use 3 months.

Sources of chronic pain include:

- Peripheral vascular disease
- Improper positioning
- Decubitus ulcer
- Mouth/teeth problems
- Degenerative joint disease
- Osteoarthritis/Rheumatoid arthritis
- Fibromyalgia
- Post-stroke syndrome
- Diabetic peripheral neuropathy
- Post-herpetic neuralgia
- Back pain
- Osteoporosis

Non-malignant pain is often under-reported and undertreated due to:

- Patients not reporting pain, because they believe it is a part of the aging process.
- Patients' concern about the possibility of addiction with the use of pain medications.
- Belief that geriatric patients experience less pain as they get older.
- Difficulty diagnosing and treating pain in patients with dementia.
- Fear that geriatric patients may not be able to tolerate pain medications due to their increased risk of adverse effects.
- Difficulty diagnosing the source of the pain due to numerous co-morbid diseases in geriatric patients.

Treatment of Chronic Pain

Goal of treating chronic pain is to reduce (may not be possible to eliminate) pain and improve function.

- Around the clock (ATC) pain management
  - Maintains a stable analgesic blood level and gives structure to pain management plan for chronic, persistent pain
- As needed (PRN) medications
  - For episodic and breakthrough pain
  - Used in combination with ATC
- Physical therapy
- Exercise
- Acupuncture, massage, yoga, tai chi
- Psychological interventions

Treatment of Mild-Moderate Chronic Pain with Non-Opioid Medications

Acetaminophen and NSAIDs can be used in conjunction with opioids to produce an opioid-sparing effect, thereby allowing a reduction in the dose of opioid that is required for effective pain management. Lower doses of opioids can result in fewer or less severe side effects.

ACETAMINOPHEN (TYLENOL®)

- Considered the drug of choice for mild to moderate chronic pain.
- Analgesic and antipyretic effect, but does not have anti-inflammatory effect.
- Dosed every 4 to 6 hours with a maximum dose of 4,000mg/day and 2,000-3,000mg/d in frail geriatric patients.
- Inhibits synthesis of prostaglandins in the central nervous system and peripherally blocks pain impulse generation.
- Found in numerous combination products- do not exceed the maximum dose.
- Overdose can lead to liver toxicity.
- Contraindicated in patients with liver failure.
- Use caution in patients with liver dysfunction and chronic alcohol abuse.

NSAIDS

Two groups of nonsteroidal anti-inflammatory drugs (should only be considered in patients who have failed other therapies):

1) Nonselective NSAIDs
2) COX-2 selective NSAIDs

- NSAID use in the geriatric population places them at an increased risk for developing:
  - Gastrointestinal bleeds
  - Hypertension
  - Kidney problems
  - Drug interactions
  - Confusion

NONSELECTIVE NSAIDS

- Examples: ibuprofen (Advil®), naproxen (Aleve®).
- Provide an analgesic, antipyretic, and anti-inflammatory effect by inhibition of prostaglandin.
- May be appropriate for short term use, but should be used with caution for chronic use in the geriatric population.

COX-2 SELECTIVE NSAIDS

- Thought to be more selective than other NSAIDs in targeting inflammation.
- Example: celecoxib (Celebrex®).
- Indicated for rheumatoid arthritis, osteoarthritis, and acute pain.
- Use with caution in patients with cardiovascular risk factors.

ANTIDEPRESSSANTS

Tricyclics: Nortriptyline, Desipramine

- Often used to treat diabetic neuropathic pain and postherpetic neuralgia.
- Very sedating—administer at bedtime.
- Use low doses to treat pain.
- Narrow therapeutic window.
- Side effects include sedation, orthostatic hypotension.
- May be used as an adjunct with opioids.

Serotonin and norepinephrine-reuptake inhibitor

- Duloxetine (Cymbalta®), Milnacipran (Savella®)
  - Treatment of diabetic peripheral neuropathy.
  - Monitor blood pressure and heart rate.
- Venlafaxine (Effexor®)
  - Use high doses of 225mg or higher.

ANTICONVULSANTS

- Helps decrease the spontaneous firing of sensory neurons associated with neuropathic pain.
- Gabapentin (Neurontin®), Pregabalin (Lyrica®)
  - Very well tolerated. Side effects include sedation, ataxia, and dizziness.
  - May take 2-3 weeks to see therapeutic benefit.
  - Few drug interactions.
- Topiramate (Topamax®), Tiagabine (Gabitril®) can also be used.

TOPICAL AGENTS

Capsaicin Cream

- Capsaicin is an enzyme found in all hot peppers.
- It depletes a pain mediator (Substance P) from afferent nociceptive neurons.
- Used in the treatment of peripheral neuropathic pain and arthritic pain.

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- Applied to the affected area 3 to 4 times a day; and may take a few weeks of treatment to achieve the full effect.
- May initially cause local burning sensation.
- Use gloves to apply cream, wash hands thoroughly afterwards, and avoid eyes and mucus membranes.

Lidoderm® Patch

- Treatment of pain associated with post-herpetic neuralgia, peripheral neuropathy, and osteoarthritis.
- Apply only to intact skin.
- Patch may be cut into pieces.
- Apply up to three patches, only once, for up to 12 hours within a 24-hour period.
- Local anesthetic agent that inhibits initiation and conduction of impulses.
- Most common side effect is skin irritation.

CALCITONIN (MIACALCIN®)

- Beneficial short-term effect on pain in patients who have sustained an osteoporatic fracture.
- How it relieves pain is unknown.
- Intranasal: 200 units (1 spray)/day.
- Side effects include facial flushing, anorexia, nausea.

TRAMADOL (ULTRAM®), (RYZOLT®)

- Dual mechanism of action that not only binds weakly to opioid agonists, but it also inhibits the reuptake of serotonin and norepinephrine.
- Start at a small dose and slowly increase (over weeks) to avoid GI side effects, so, not ideal for acute pain.
- Maximum dose in patients >75 years old is 300mg/d.
- Doses > 400mg/d have been associated with seizures.
- Caution with use in combination with other medications that affect serotonin (e.g., serotonin reuptake inhibitors and tricyclic antidepressives) since it may increase the risk of seizures and serotonin syndrome.
- Side effects include nausea, constipation, sedation, and seizures.

Treatment of Moderate-Severe Chronic Pain with Opioid Medications

MORPHINE

- Drug of choice for moderate-severe pain.
- May result in accumulation and toxicity in patients with impaired renal or hepatic function due to the presence of metabolites.
- Available in immediate (Roxanol®) and controlled/extended release (MS Contin®, Kadian®, Avinza®) formations.

OXYCODONE

- Available in immediate and sustained release formations and in combination with non-opioid analgesics.
- Only available in oral formation.
- Immediate release (oxycodone, Percocet®) q 3-4 hours.
- Sustained release (OxyContin®) q 12 hours.
- Does not have an active metabolite.
- Caution not to exceed the maximum dose of the non-opioid analgesic.

HYDROCODONE

- Only available in combination with a non-opioid analgesic such as acetaminophen.
- Examples include: Vicodin®, Lortab®
- Caution not to exceed the maximum dose of the non-opioid analgesic.

HYDROMORPHONE

- Short acting and lack of an active metabolite permits this medication to be used in patients with renal impairment.
- Analgesic 4 times as potent as morphine.
- Available in an oral immediate (Dilaudid®). (Extended release formulation Palladone® recently recalled for safety concerns.)
- Useful when requiring high doses of opioids.

CODEINE

- Weaker opioid for mild to moderate pain.
- Available in combination with non-opioid analgesics.
- Some patients may not be able to convert it to morphine due to an inactive CYP 2D6 and may experience ineffective pain control.
- High incidence of constipation and nausea.
- Caution not to exceed the maximum dose of the non-opioid analgesic.

FENTANYL

- 100 times more potent than morphine.
- Available in IV, transdermal, or transmucosal.
- Duragesic® – transdermal patch
  - For management of <u>persistent</u>, chronic pain that requires continuous treatment.
  - Worn continuously for 72 hours and applied to chest, back, flank or upper arm.
  - Takes 12 -24 hours for onset of action, so make breakthrough pain medication available when initiating the patch.
  - Titration to an effective dose can take days to weeks.
  - Use with caution in opioid-naïve patients.
  - Do **NOT** cut the patch.
  - Fold used patch so adhesive side adheres to itself immediately upon removal.

- Actiq® - transmucosal lozenge and Fentora® - tablet that dissolves in the cheek.
  - Rapid acting analgesic for breakthrough pain.
  - Not equivalent.
  - Patient must have the ability to continuously suck the lozenge.

Adverse Opioid Side Effects

- Include respiratory depression, nausea, vomiting, and constipation.
- Although a patient will become tolerant to the nausea and vomiting, constipation will remain a problem.
- When a patient is started on an opioid, make sure the patient has an appropriate bowel regimen with a stool softener and laxative.
- Titrate slowly in opioid-naïve patients to reduce the risk of respiratory depression.

Opioid Withdrawal Symptoms

- May occur if opioids are stopped abruptly in patients who have taken them chronically and have developed a physical dependence.
- Symptoms may include anxiety, insomnia, diaphoresis, nausea, vomiting, diarrhea and abdominal pains. If an opioid needs to be discontinued, taper the opioid.

Tolerance vs. Dependence vs. Addiction

Tolerance

Occurs when the initial dose of an opioid loses its effectiveness over time, requiring higher doses to produce the same analgesic effect.

Physical Dependence

Occurs over time as your body adapts to the opioid, and withdrawal symptoms may occur if the opioid is withdrawn abruptly.

Addiction

Is a disease marked by cravings for the opioid and continued use despite repeated harmful consequences.

Medications to Avoid in the Geriatric Population

- Propoxephene/Acetaminophen (Darvocet®)
  - Weak analgesic.
  - Equal to acetaminophen in relieving pain.
  - Active metabolite that can cause severe CNS and cardiac toxicity.
- Meperidine (Demerol®)
  - Short duration of action.
  - Active metabolite (normeperidine) can accumulate and cause severe CNS toxicity (tremors, seizures, mood alterations, and confusion).
- Methadone
  - Not recommended in older adults.
  - Very long half-life, which can lead to accumulation in older adults.
  - Slowly titrate to an effective dose.
  - Side effects can persist even after the drug has worn off.

Key Concepts in Controlling Chronic Pain

- Use a preventative approach with treating pain.
- Titrate up to an effective dose to minimize side effects.
- Assess and reassess pain control.
- Monitor for changes in behaviors in patients with cognitive impairments.

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