Treatment of pain in the Elderly

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Objectives

At the end of the lecture the learner will:

1. Be aware of common barriers to accurately assessing pain in the elderly
2. Learn how the physiology of aging may impact use of pain relievers
3. Be provided with information that will reduce knowledge deficits resulting in safer prescribing of pharmacologic agents in the treatment of pain in the elderly
Background

• Older adults- risk of inadequate pain management
• 25% to 50% of community-dwelling seniors have pain that interferes with normal function
• 2011 Institute of Medicine Report “Relieving Pain In America”- 16 million Americans burdened with chronic pain
• Three in five 65 years or older have pain lasting a year or more
• > 60% of U.S. nursing home residents report pain
  persistent pain usually musculoskeletal-osteoarthritis
Background

- Pain - inadequately assessed or inappropriately treated in the older population, and not always documented in their medical records

Lövheim Age Ageing. 2006;35:257-261

- In a retrospective, cross-sectional study, impaired cognitive function was independently associated with a decreased notation of pain

JAMA. 1998;279:1877-1882

- Inadequately treated pain --> depression, sleep disturbances, anxiety, fatigue, impaired ambulation, and decreased socialization = poor quality of life
Pain- under reported

• Older people tend to report less pain-reduced neural processing, variations in communication styles based on age-related stoicism, other factors—is not clear


• may not report pain-personal preferences, or derive from cultural or psychological factors

J Am Geriatric Soc. 2009;57:1331-1346

• fear additional tests, excessive costs, or pain indicates disease progression, be seen as “good patients”, don't waste the healthcare professional’s time, assume provider knows when pain occurs
American Geriatric Society (AGS) Recommendations Regarding Assessment

- initial presentation or admission- assess the patient for evidence of persistent pain

- persistent pain with impact on physical function, psychosocial function, or quality of life --> significant problem

- persistent pain- undergo a comprehensive pain assessment to identify all potentially remediable factors

- focus on events leading to present pain, establish diagnosis, management plan, and likely prognosis
Tools for Assessing Pain in Older Adults

- Best indicator of pain experience - self-report for both pain intensity and effect on daily function

- Variety of pain assessment tools available

- Selection based on setting of care, patient characteristics (e.g., presence of dementia), other relevant considerations

- Simply worded questions, Visual Analog Scale, Pain Thermometer, and the Faces Pain Scale are highly effective

*J Am Geriatric Soc 2009;57:1331-1346*
Key Points in Assessing Aging Patients

- words such as “burning,” “discomfort,” “aching,” “soreness,” and others substituted for “pain”

- cognitive/language impairments are common → nonverbal and vocalized behaviors, recent changes in function as indicators of pain

- detailed evaluation of activities of daily living (ADLs) and performance measures of function

- influence of persistent pain on mood and psychological function—(e.g., Geriatric Depression Scale)
Impact of Central Nervous System (CNS) Disorders

- dementia patients —> significant obstacle to pain assessment, clinicians may ignore or underestimate pain
  

- verbal reports decline as cognitive impairment worsens
  
  *Pain Res Manag. 2007;12:177-184*

- nonverbal nursing home residents —> half as likely to have their pain identified compared to those who could communicate
  
  *Clin Geriatr Med. 2001;17:575-594*

- severe dementia —> use caregiver history or direct observation for evidence pain during movement
## Common Pain Behaviors in Cognitively-Impaired Elderly Persons

<table>
<thead>
<tr>
<th>Facial expression</th>
<th>Changes in interpersonal interactions</th>
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<tbody>
<tr>
<td>Slight frown; sad, frightened face</td>
<td>Aggressive, combative, resisting care</td>
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<tr>
<td>Grimacing, wrinkled forehead, closed</td>
<td>Decreased social interactions</td>
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<tr>
<td>or tightened eyes</td>
<td>Socially inappropriate, disruptive</td>
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<tr>
<td>Any distorted expression</td>
<td>Withdrawn</td>
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<tr>
<td>Rapid blinking</td>
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<table>
<thead>
<tr>
<th>Verbalizations, vocalizations</th>
<th>Changes in activity patterns or routines</th>
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<tbody>
<tr>
<td>Sighing, moaning, groaning</td>
<td>Refusing food, appetite change</td>
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<tr>
<td>Grunting, chanting, calling out</td>
<td>Increase in rest periods</td>
</tr>
<tr>
<td>Noisy breathing</td>
<td>Sleep, rest pattern changes</td>
</tr>
<tr>
<td>Asking for help</td>
<td>Sudden cessation of common routines</td>
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<tr>
<td>Verbally abusive</td>
<td>Increased wandering</td>
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<table>
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<tr>
<th>Body movements</th>
<th>Mental status changes</th>
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<tbody>
<tr>
<td>Rigid, tense body posture, guarding</td>
<td>Crying or tears</td>
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<tr>
<td>Fidgeting</td>
<td>Increased confusion</td>
</tr>
<tr>
<td>Increased pacing, rocking</td>
<td>Irritability or distress</td>
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<td>Restricted movement</td>
<td></td>
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<td>Gait or mobility changes</td>
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Note: Some patients demonstrate little or no specific behavior associated with severe pain.

Non-pharmacologic Management Options for Older Adults

- cognitive behavioral strategies
- education
- relaxation techniques
- biofeedback
- chiropractic
- acupuncture
- TENS therapies
- physical and occupational therapy
- exercise
- heat, cold, massage
Age-Related Physiologic Changes

- Decreased renal function
- Decreased volume of distribution of hydrophilic drugs because of decreased lean body weight
- Decreased liver mass and hepatic blood flow
- Decreased activity in some (oxidative) drug-metabolizing enzymes
- Decreased serum protein concentrations

→ may result in a longer duration of action and greater or lower plasma concentration for many analgesics
Age-Related Physiologic Changes

- peak level can be relatively higher and earlier
- area under-the-curve can be greater
- pharmacodynamic sensitivity to drugs
- decreased physiological reserve
- comorbid diseases
- multiple medications
- drugs displace analgesics from protein binding sites
- more sensitive to the sedative effects of centrally-acting drugs-particularly likely when existing alterations in baseline mental status
- heightened or paradoxical response to psychotropic drugs (i.e., paradoxical agitation in response to barbiturates or benzodiazepines).
American Geriatrics Society Recommendations for Choosing Medications

- Use the least invasive route to give medication.
- Start low and go slow
- Nonsteroidal anti-inflammatory drugs should be used with caution due to side effects
- Opioid analgesics are effective for relieving acute moderate to severe pain
- Pharmacologic therapy is most effective when combined with nonpharmacologic therapy
Acetaminophen

- for mild and moderate pain —> considered first line
- nontoxic in therapeutic doses
- analgesic ceiling
- leading cause of acute liver failure in the United States
- maximum dose - 2000 mg per day in elderly
- more than 2 or 3 alcoholic drinks —> increased risk of toxicity
- patients who fast or do not eat regularly —> greater risk of acetaminophen-induced hepatotoxicity
- acetaminophen/NSAID no greater analgesia than either drug alone
- chronic excessive use may impair renal function
NSAIDs

- NSAIDs advantage over opioid analgesics --> lack of sedative or respiratory depressant effects

- bind strongly to proteins, metabolized by the liver, secreted by the kidney

- renal excretion declines with age --> drug half-life may become longer

- serum concentrations increased due to decreased protein binding

- renal impairment by lowering the glomerular filtration rate through an anti-prostaglandin effect

- reduce doses based on the extent of hepatic or renal impairment
NSAIDs

- prothrombotic effects - could increase risk of stroke, transient ischemic attack, myocardial infarction (MI) and symptomatic coronary artery disease or symptomatic peripheral vascular disease

- exacerbate hypertension, heart failure

- overall risk is relatively low --> increasing dose and longer duration of use

*JAMA. 2006;296:1633-1644*
Questions Concerning Wisdom of Opioid Therapy for Elderly Patients with Persistent Noncancer Pain

(I) Initial Evaluation

(1) What is conventional practice for this type of pain or patient?
(2) Is there an alternative therapy that is likely to have an equivalent or better therapeutic index for pain control, functional restoration, and improvement in quality of life?
(3) Does the patient have medical problems that may increase the risk of opioid-related adverse effects?
(4) Is the patient likely to manage the opioid therapy responsibly (or relevant caregiver likely to responsibly co-manage)?

(II) Role of Consultant or Specialist

(1) Am I able to treat this patient without help?
(2) Do I need the help of a pain specialist or other consultant to co-manage this patient?
(3) Are there appropriate specialists and resources available to help me co-manage this patient?
(4) Are the patient’s medical, behavioral or social circumstances so complex as to warrant referral to a pain medicine specialist for treatment?
Opioid Analgesics

- strong consensus for opioid analgesics as first-line approach for:
  - severe acute pain
  - moderate-to-severe chronic pain with active cancer or any other type of advanced illness

- systematic analysis of opioids for chronic non-cancer pain with short term use
  - reduction in pain intensity
  - improved physical functioning
  - decreased mental health functioning
  - approximately 25% of patients discontinuing therapy from adverse effects

- opioids to treat chronic non-cancer pain remains controversial

- evidence for long term effectiveness in persistent non-cancer pain is lacking

- patients with moderate to severe pain, pain-related functional impairment, or diminished quality of life due to pain --> consider opioid therapy


- undertaken cautiously --> pharmacokinetic and pharmacodynamic processes
# Starting doses for opioid naïve patients

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<tr>
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<th>Adult &gt;50kg; normal renal and liver function</th>
<th>Elderly or <em>moderate</em> renal or liver disease</th>
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<tbody>
<tr>
<td><strong>Morphine PO</strong></td>
<td>5 mg q4-6 hr prn</td>
<td>2.5 mg q6-8 hr prn</td>
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<tr>
<td><strong>Oxycodone PO</strong></td>
<td>5 mg q4-6 hr prn</td>
<td>2.5 mg q6-8 hr prn</td>
</tr>
<tr>
<td><strong>Hydrocodone PO</strong></td>
<td>5 mg q4-6 hr prn</td>
<td>2.5 mg q6-8 hr prn</td>
</tr>
<tr>
<td><strong>Hydromorphone PO</strong></td>
<td>1 mg q4-6 hr prn</td>
<td>0.5 mg q6-8 hr prn</td>
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AMA Recommendations for Management of Persistent Pain in Older Adults

- The key to effective treatment of persistent pain lies in comprehensive assessment. All older persons should be screened for persistent pain on initial evaluation, on admission to any health care service, and periodically thereafter. Any persistent pain that has an impact on physical function, psychological function, or quality of life should be considered a significant problem.

- The zero to ten numeric pain scale is a good first choice for assessment of pain intensity; however, other scales such as word descriptor scales, faces scales, or pain thermometers may be more appropriate for some patients.

- For those with moderate to severe cognitive impairment, assessment of behaviors and family or caregiver’s observations are essential.

- Acetaminophen should be the first drug to consider in the treatment of mild to moderate pain of musculoskeletal origin.

- Careful patient assessment is needed before long-term treatment with a NSAID is undertaken; these drugs must be used cautiously in those at risk for GI, renal or cardiovascular toxicity.

- Opioid analgesic drugs may be useful but require a careful assessment of risk prior to, and during treatment, as well as skillful individualization of the dose and side effect management.

- An individualized program of physical activity should be designed to improve flexibility, strength, and endurance, and should be maintained indefinitely.

- Patient and caregiver education is an essential component in the management of persistent pain.

- Health care facilities that care for older patients should routinely conduct quality assurance and quality improvement activities to enhance pain management.
References


