Pain Management in Older Adults

Ann L. Horgas, RN, PhD, FGSA, FAAN

KEYWORDS

• Pain • Pain management • Pain treatment • Older adults

KEY POINTS

- Managing pain in older adults can be complex because of the age-related physiologic changes, comorbidities, and polypharmacy.
- The goal of pain management is to maximize function and quality of life by minimizing pain.
- Treatment plans should include pharmacologic and nonpharmacologic strategies.
- Patient and family education is important for safe and effective pain treatment.

INTRODUCTION

Managing pain in older adults can be a challenging process. Many older adults have different types of pain simultaneously (eg, nociceptive and neuropathic, acute and persistent) and may have other conditions that complicate pain treatment (eg, dementia, kidney, and cardiovascular disease). Balancing treatment across these different dimensions can be complex.[1] Pain management is further complicated by age-related physiologic changes that alter gastrointestinal drug absorption, distribution, liver metabolism, and renal excretion.

The primary goal of pain management in older adults is to maximize function and quality of life by minimizing pain to the extent possible.[2] Pain relief is one of the most common goals of older adults, although complete pain relief is not always possible.[1,3] It is important to understand patients' pain control goal (eg, sleep comfortably, perform activities) and pain intensity goal (0–10).[3]

A multimodal approach to pain management that includes pharmacologic and nonpharmacologic therapies is recommended.[2] Pharmacologic interventions are an integral component of pain management in older adults.[4] However, selection of pharmacologic therapies must include a risk and benefit analysis that considers the potential benefits of pain relief versus the potential risks of pain medications on

This article is the companion to the article "Pain Assessment in Older Adults " by Ann L. Horgas published in the *Nursing Clinics of North America* issue devoted to geriatric syndromes (September 2017, Volume 52, Issue 3).
University of Florida, College of Nursing, PO Box 100197-HSC, Gainesville, FL 32610, USA
E-mail address: ahorgas@ufl.edu

Nurs Clin N Am 52 (2017) e1–e7
http://dx.doi.org/10.1016/j.cnur.2017.08.001 **nursing.theclinics.com**

cognition and organ systems.[5] Side effects must be monitored, prevented when possible, and treated proactively when they occur.[6] It should be emphasized that pharmaceutical pain management is often more imperative in older adults with dementia because their ability to participate in nonpharmacologic pain management strategies, such as self-management or cognitive behavioral therapy, may be limited by their cognitive capacity.[7]

Several excellent pain management guidelines and protocols are available to guide pain management in older adults. These guidelines and protocols include guidelines from the American Geriatrics Society,[8,9] American Pain Society,[10] British Geriatric Society,[11] and the Gerontological Society of America.[12] Other resources are available that focus specifically on pain treatment. The World Health Organization (WHO) provided a consensus statement on the use of step III opioids for chronic, severe pain in older adults, which provides detailed guidelines on the use of opioids for cancer and non–cancer-related pain.[13] Some published guidelines focus on pain associated with specific diseases, such as osteoarthritis[14]; others focus on pain treatment in people with dementia.[2,15–17] The geriatricpain.org website, developed at the University of Iowa, is an excellent resource for pain management in older adults, as it includes downloadable assessment forms, measurement tools, instructional guides, and educational materials. Jablonksi and colleagues[18] also provide a comprehensive pain assessment and treatment algorithm. All of these guidelines and protocols recommend using a collaborative interprofessional team (eg, nursing, medicine, physical therapy, social work, and psychology) that considers biopsychosocial factors that influence a person's pain experience to develop a multimodal pain treatment approach (eg, pharmacologic and nonpharmacologic).[3] The reader is referred to these excellent clinical guidelines and consensus statements for detailed information. In the following section, key points about pharmacologic and nonpharmacologic pain treatment are summarized.

PHARMACOLOGIC PAIN TREATMENT

Pharmacologic pain management centers on several key principles. These principles are as follows: (1) by mouth: use the oral route whenever possible; (2) by the clock: for persistent pain, provide analgesics at regular intervals (around the clock) as opposed to as needed; and (3) by the ladder: referring to the WHO 3-step analgesic ladder. The WHO ladder characterizes types of analgesic medications in a hierarchical approach: nonopioids + adjuvant drugs, opioids for mild to moderate pain, and opioids for moderate to severe pain.[19] This guideline was developed for cancer pain but is also widely used for guiding noncancer pain treatment. It should be noted that this pain treatment ladder is nonspecific to older adults, but rather addresses pain treatment in general. The ladder provides guidelines for combining and advancing medications based on pain severity in order to maximize treatment effectiveness and minimize side effects.

When introducing analgesic treatment, the recommendation is to start at the lowest possible dose and titrate upward, while monitoring and managing side effects. The adage *start low and go slow* is often used. However, as Guerriero and colleagues[3] point out, it is important to not start low and *stay* low. Makris and colleagues[1] provide a treatment algorithm for nociceptive and neuropathic pain disorders in older adults. They highlight the continuous process of assessment and treatment to attain optimal pain control.

STEP 1 DRUGS: MILD TO MODERATE PAIN

Nonopioid Medications

Acetaminophen is the first-line treatment of mild to moderate pain in older adults.[1,9] Acetaminophen is considered a safe and effective drug when used correctly. Because

acetaminophen is an ingredient in more than 600 over-the-counter (OTC) and prescription drugs, unintentional overdose can easily occur and lead to acute liver failure. Current guidelines from the Food and Drug Administration (FDA) recommend a maximum dosage of 3000 mg of acetaminophen (from all sources) in 24 hours. In 2014, the FDA also issued a safety announcement to the public that acetaminophen is associated with rare but serious skin reactions that include reddening of the skin, rash, or blisters. Patients and families should be educated about the dose limits, the inclusion of acetaminophen in many combination drugs, and the signs of potential side effects. Providers should also carefully assess all medications, including OTC drugs, when auditing patients' medications.

Nonsteroidal antiinflammatory drugs (NSAIDs) are considered more effective than acetaminophen for patients with inflammatory pain (eg, rheumatologic diseases). However, geriatric guidelines recommend that NSAIDs be used with caution and for the shortest duration possible, as they are associated with significant gastrointestinal, cardiovascular, and renal side effects. The risks are associated with both types of NSAIDs: nonselective (eg, ibuprofen, naproxen) and cyclooxygenase-2 selective inhibitors. Naproxen seems to have the best cardiovascular safety profile.[3] According to the updated "Beers Criteria for Potentially Inappropriate Medication Use in Older Adults,"[20] nonselective NSAIDs should be avoided in older adults who cannot take a proton pump inhibitor or misoprostol. Patient education is needed to identify all sources of NSAIDS (eg, trade names for various ibuprofen products), avoid overuse or extended use of OTC NSAIDs, and to recognize potential side effects.

Adjuvant Drugs

Adjuvant drugs are those administered in conjunction with analgesics to relieve pain. Antidepressants and antiepileptic medications often provide pain relief beyond their intended indications. They may be administered with nonopioids and opioids to achieve optimal pain control through additive analgesic effects or to enhance the response to analgesics. Adjuvant drug therapy is specifically recommended for neuropathic pain.[9] Tricyclic antidepressants (eg, nortriptyline, desipramine) should be avoided in older adults because of their anticholinergic effects, which increase the risk of confusion, dry mouth, and constipation.[9] Serotonin reuptake inhibition and mixed serotonin and norepinephrine uptake inhibition antidepressants are safer for use in older adults.[9] Anticonvulsants (eg, gabapentin) may be used as adjuvant drugs for neuropathic pain, such as trigeminal neuralgia and postherpetic neuralgia, and they have fewer side effects than tricyclic antidepressants.[21] Side effects, such as lethargy and confusion, should be monitored. Local anesthetics, such as lidocaine as a patch, gel, or cream, can be used as an additional treatment of the pain of postherpetic neuralgia.

There are other categories of nonpain drugs that should be avoided in older adults. Skeletal muscle relaxants are prescribed to treat muscle spasms and back pain but should also be avoided because of their central nervous system side effects (eg, confusion or hallucinations), which can increase the risk of falls. Drugs used to treat side effects, such as sedatives, antihistamines, and antiemetics, should be used cautiously because of their long duration of action and anticholinergic and sedating side effects profiles.[9]

STEP 2 AND 3: OPIOIDS FOR MILD, MODERATE, OR SEVERE PAIN

When pain persists, increases, or has significant pain-related functional impairment, opioid medications may be considered for older adults.[1,9] Opioid analgesics must

be carefully selected and monitored. Patients with persistent uncontrolled pain requiring opioid therapy should receive around-the-clock, scheduled dosing to ensure steady-state levels. Extended-release opioids can reduce the need for frequent dosing and provide better relief.[5] Patients must be prescribed opioids based on clearly defined therapeutic goals. If goals are not met, the medication should be tapered and discontinued.[1,22] Many older adults and health care providers are reluctant to use opioids because of fears of addiction and side effects, such as nausea, pruritus, constipation, drowsiness, cognitive effects, and respiratory depression.[9] Patient and family education should address appropriate use of the medication, safety precautions (eg, falls, driving), safe storage to prevent diversion, risks of obtaining opioid prescriptions from multiple providers, and management of side effects. To prevent constipation, preventive measures should be initiated when the opioid is started (eg, stool softeners, adequate fluid intake, moderate activity).[9] Opioid therapy for persistent noncancer pain in older adults is associated with increased risk of falls, fall-related injuries, hospitalization, and all-cause mortality.[1,23] When multiple prescribers are involved, there are higher rates of hospital admissions related to opioid use.[1,24]

Opioid use has been shown to be efficacious for short-term use, but little is known about the efficacy of long-term use.[22] Among older adults in the United States, high rates of opioid drug prescriptions have been documented.[25] This finding is an often overlooked aspect of the national opioid epidemic, characterized by fatal overdoses, drug diversion, and opioid abuse or misuse.[25] Many efforts have been initiated to reduce this problem, including the development of drug monitoring programs, abuse-deterrent drug formulations, and educational programs. In 2016, the Centers for Disease Control and Prevention published 12 recommendations for prescribing opioid drugs to patients with noncancer pain.[25] Broadly, the recommendations are aimed at helping providers to (1) determine when to initiate opioids and guidance on the selection and dosing of opioids; (2) determine whether the treatment is beneficial and decide whether to continue opioid therapy; and (3) conduct risk assessments and address harm that occurs as a result of opioid use.[25] In an insightful editorial, Guerriero and Reid[26] evaluate these recommendations as they pertain to persistent pain in older adults and conclude that there are benefits and potential risks to the guidelines. In particular, they suggest that the guidelines may have deleterious consequences for older adults by increasing the number of NSAIDs that are prescribed, causing overreliance on acetaminophen that may not adequately reduce the pain, and reducing access to opioids for those elders who need it. Benefits may occur, however, from the recommendation to establish clear treatment goals for opioid use and educating patients about the risks and benefits of opioid drugs. The outcome of these recommendations will bear watching to see their effect on opioid use in Americans in general and specifically for older adults.

NONPHARMACOLOGIC PAIN TREATMENT

Nondrug pain treatment strategies are an important component of effective pain management in older adults and may be used alone or in combination with pharmacologic therapies.[27] There is a wide range of nonpharmacologic strategies aimed at physical activity (eg, exercise, activity modification), nutrition (eg, vitamins and supplements), external applications (eg, ointments, massage, heat/cold application), and relaxation/distraction (eg, breathing, meditation, imagery, music).[28] Transcutaneous electrical nerve stimulation (TENS) is also commonly used and is now commercially available as an OTC medical device. There is evidence to support the use of acupuncture, mindfulness meditation, massage, TENS, and cognitive behavioral therapy to treat pain.[27]

Because pain is multidimensional with physical, psychological, and emotional aspects, the inclusion of psychosocial interventions is recommended.[1,11,29] Older adult patients should be prescribed nonpharmacologic treatment, separately or in combination with drug therapy, to achieve effective pain management.[1] Individual preferences and capabilities should be considered in selecting nonpharmacologic therapies. Spiritual and/or religious coping strategies, for instance, must be consistent with individual values and beliefs. Other strategies, such as guided imagery, biofeedback, or relaxation, may not be feasible for cognitively impaired older adults. Tai chi or exercise should be customized based on functional ability and mental status of individual adults. Therefore, it is important for health care providers to consider a broad array of nonpharmacologic pain management strategies and to tailor selections to the individual. It is also important to inquire about the use of home and folk remedies because these modalities are often not disclosed to health care providers, increasing the risk for negative drug-herb interactions.[30]

SUMMARY

Pain treatment in older adults should be tailored to the type and severity of pain, with medications that can be safely used in older adults and combined with nonpharmacologic treatment. Patient and family education about pain and pain treatment is an integral part of effective pain management. Effective pain management is complex, and complete pain relief may be elusive. Nonetheless, pain management should be viewed as a continual process of assessment and treatment in order to optimize comfort and quality of life for older adults.

REFERENCES

1. Makris UE, Abrams RC, Gurland B, et al. Management of persistent pain in the older patient: a clinical review. JAMA 2014;312(8):825–36.
2. Horgas AL, Grall M, Yoon SJ. Pain management in older adults. In: Boltz M, Capezuti E, Fulmer T, et al, editors. Evidence-based geriatric nursing protocols for best practice. 5th edition. New York: Springer; 2016. p. 263–81.
3. Guerriero F, Bolier R, Van Cleave JH, et al. Pharmacological approaches for the management of persistent pain in older adults: what nurses need to know. J Gerontological Nurs 2016;42(12):49–57.
4. Marcum ZA, Duncan NA, Makris UE. Pharmacotherapies in geriatric chronic pain management. Clin Geriatr Med 2016;32(4):705–24.
5. Kaye AD, Baluch A, Scott JT. Pain management in the elderly population: a review. Ochsner J 2010;10(3):179–87.
6. Ersek M, Polomano RA. Nursing management of pain. In: Lewis SL, Dirksen SR, Heitkemper MM, et al, editors. Medical-Surgical nursing: assessment and management of clinical problems. 8th edition. Philadelphia: Elsevier; 2011. p. 127–52.
7. Buffum MD, Hutt E, Chang VT, et al. Cognitive impairment and pain management: review of issues and challenges. J Rehabil Res Development 2007;44(2):315–30.
8. The management of persistent pain in older persons. J Am Geriatr Soc 2002;50(6 Suppl):S205–24.
9. Pharmacological management of persistent pain in older persons. J Am Geriatr Soc 2009;57(8):1331–46.
10. Hadjistavropoulos T, Herr K, Turk DC, et al. An interdisciplinary expert consensus statement on assessment of pain in older persons. Clin J Pain 2007;23(1 Suppl): S1–43.

11. Abdulla A, Bone M, Adams N, et al. Evidence-based clinical practice guidelines on management of pain in older people. Age Ageing 2013;42(2):151–3.
12. Morrissey MB, Horgas AL, Miller EA, et al. An interdisciplinary look at the potential of policy to improve the health of an aging America: focus on pain. Washington, DC: The Gerontological Society of America; 2014.
13. Pergolizzi J, Boger RH, Budd K, et al. Opioids and the management of chronic severe pain in the elderly: consensus statement of an international expert panel with focus on the six clinically most often used World Health Organization step III opioids (buprenorphine, fentanyl, hydromorphone, methadone, morphine, oxycodone). Pain Pract 2008;8(4):287–313.
14. Hochberg MC, Altman RD, April KT, et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. Arthritis Care Res 2012; 64(4):465–74.
15. Corbett A, Achterberg W, Husebo B, et al. An international road map to improve pain assessment in people with impaired cognition: the development of the Pain Assessment in Impaired Cognition (PAIC) meta-tool. BMC Neurol 2014; 14:229.
16. Corbett A, Husebo BS, Achterberg WP, et al. The importance of pain management in older people with dementia. Br Med Bull 2014;111(1):139–48.
17. Herr K, Coyne PJ, Key T, et al. Pain assessment in the nonverbal patient: position statement with clinical practice recommendations. Pain Management Nurs 2006; 7(2):44–52.
18. Jablonski AM, DuPen AR, Ersek M. The use of algorithms in assessing and managing persistent pain in older adults. Am J Nurs 2011;111(3):34–43 [quiz: 44–5].
19. Pasero C, McCaffery M. Pain assessment and pharmacologic management. St Louis (MO): Mosby Elsevier; 2011.
20. American Geriatrics Society. 2015 updated Beers criteria for potentially inappropriate medication use in older adults. J Am Geriatr Soc 2015;63(11):2227–46.
21. American Geriatrics Society Panel on Exercise and Osteoarthritis. Exercise prescription for older adults with osteoarthritis pain: consensus practice recommendations. A supplement to the AGS clinical practice guidelines on the management of chronic pain in older adults. J Am Geriatr Soc 2001;49(6): 808–23.
22. Reid MC, Eccleston C, Pillemer K. Management of chronic pain in older adults. BMJ 2015;350:h532.
23. O'Neil CK, Hanlon JT, Marcum ZA. Adverse effects of analgesics commonly used by older adults with osteoarthritis: focus on non-opioid and opioid analgesics. Am J Geriatr Pharmacother 2012;10(6):331–42.
24. Jena AB, Goldman D, Weaver L, et al. Opioid prescribing by multiple providers in Medicare: retrospective observational study of insurance claims. BMJ 2014;348: g1393.
25. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain - United States, 2016. MMWR Recommendations Rep 2016;65(1): 1–49.
26. Guerriero F, Reid MC. New opioid prescribing guidelines released in the US: what impact will they have in the care of older patients with persistent pain? Curr Med Res Opin 2017;33(2):275–8.
27. Abdulla A, Adams N, Bone M, et al. Guidance on the management of pain in older people. Age Ageing 2013;42(suppl 1):i1–57.

28. Stewart C, Leveille SG, Shmerling RH, et al. Management of persistent pain in older adults: the MOBILIZE Boston study. J Am Geriatr Soc 2012;60(11):2081–6.
29. Keefe FJ, Porter L, Somers T, et al. Psychosocial interventions for managing pain in older adults: outcomes and clinical implications. Br J Anaesth 2013;111(1): 89–94.
30. Yoon SL, Schaffer SD. Herbal, prescribed, and over-the-counter drug use in older women: prevalence of drug interactions. Geriatr Nurs 2006;27(2):118–29.