Management of Pain in Older Adults

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The elderly are often untreated or undertreated for pain. Barriers to effective management include challenges to proper assessment of pain; underreporting on the part of patients; atypical manifestations of pain in the elderly; a need for increased appreciation of the pharmacokinetic and pharmacodynamic changes of aging; and misconceptions about tolerance and addiction to opioids. Physicians can effectively manage pain in the elderly by understanding different types of pain (nociceptive and neuropathic), and appropriate use of nonopioid, opioid, and adjuvant medications.

Opioids have become more widely accepted for treating older adults who have persistent pain, but their use requires physicians have an understanding of prevention and management of side effects, opioid titration and withdrawal, and careful monitoring. Placebo use is unwarranted and unethical. Nonpharmacologic approaches to pain management are essential and include osteopathic manipulative treatment, cognitive behavioral therapy, exercise, and spiritual interventions. The holistic and interdisciplinary approach of osteopathic medicine offers an approach that can optimize effective pain management in older adults.

Pain is a common complaint of the elderly. As the number of individuals older than 65 years continues to rise, frailty and chronic diseases associated with pain will likely increase. Therefore, primary care physicians will face a significant challenge in pain management in older adults. The elderly are more likely to have arthritis, bone and joint disorders, cancer, and other chronic disorders associated with pain.1 Between 25% and 50% of community-dwelling elderly have important pain problems.2 Nursing home-dwelling elderly have an even higher prevalence of pain, which is estimated to be between 45% and 80%.3

The elderly are often either untreated or undertreated for pain. The consequences of undertreatment for pain can have a negative impact on the health and quality of life of the elderly, resulting in depression, anxiety, social isolation, cognitive impairment, immobility, and sleep disturbances.4 Reasons physicians often cite for inadequate pain control include lack of training, inappropriate pain assessment, and reluctance to prescribe opioids.2

As with other age groups, the elderly have pain that can be classified pathophysiologically as either nociceptive or neuropathic in origin. Alternatively, pain may be mixed, that is, having origins that are both nociceptive and neuropathic. Nociceptive pain may be either visceral or somatic and is due to stimulation of pain receptors. In the elderly, this stimulation may be the result of inflammation or musculoskeletal or ischemic disorders. Patients with nociceptive pain are treated pharmacologically with both opioid and nonopioid agents, as well as nonpharmacologic interventions.1,3 Neuropathic pain results from a pathophysiologic disturbance of either the peripheral or the central nervous system. In the elderly, common examples include postherpetic neuralgia and diabetic neuropathy. Patients with neuropathic pain are less likely to respond to agents used to treat patients with nociceptive pain and more likely to respond to adjuvant agents such as anticonvulsants and antidepressants. Pain of mixed origins may respond to administration of agents that treat for both nociceptive and neuropathic pain.1,4

Because diseases often have an atypical presentation in the elderly, it has been speculated that pain perception may be different in older adults. Although pain sensitivity and tolerance across all ages varies,5 it is generally accepted that such differences probably do not have a significant clinical impact.

As is the case in the use of any medications in the elderly, older adults are likely to have an increased risk of adverse reactions to the use of pharmacologic agents to manage pain. This propensity is likely due to pharmacokinetic changes such as reduced renal excretion and hepatic metabolism, as well as pharmacodynamic changes that occur with age.

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such as an increased sensitivity to certain analgesics, particularly the opioids. In addition, polypharmacy is a contributing factor for the increased incidence of adverse drug reactions.

For pain management to be effective in the elderly, physicians need to be skillful in pain assessment; capable of recognizing the importance of a holistic, interdisciplinary team approach to care; and knowledgeable of both pharmacologic and nonpharmacologic approaches to management.

Assessment of Pain in the Elderly
Effective assessment of pain in the elderly can be challenging. It requires an appreciation that pain may present atypically, particularly in the cognitively impaired. Because biologic markers are not available, self-reporting is viewed as the best evidence for the presence of pain and the optimal way to assess pain intensity.

Pain has been described as the “fifth vital sign,” and therefore, physicians should regularly inquire about the presence of pain in their elderly patients. Pain can be assessed, even in those with dementia, using simple questions and screening tools.

Assessing pain in the elderly is often associated with significant obstacles. Older adults frequently fail to report pain because they may view that it is an expected part of old age or because they are fearful that it may lead to more diagnostic testing or added medication. Some patients may accept pain as punishment for past actions. Communication and cognitive disturbances are additional barriers to such assessment. Increased agitation, changes in functional status, altered gait, and social isolation may be signs of pain in patients with dementia. A comprehensive assessment should include a careful history and physical examination and diagnostic studies aimed at identifying the precise etiology of pain. Characteristics such as intensity, frequency, and location should be described. Standardized geriatric assessment tools to assess function, gait, affect, and cognition should be used. Intensity should be assessed by using one of several pain scales that have been accepted for use in the elderly (Figure 1).

A verbally administered 0-through-10 scale is an effective measurement of pain intensity in most older adults. When using this scale, physicians can ask patients, “on a scale of zero to 10, with zero meaning no pain and 10 meaning the worst pain possible, how much pain do you have now?” Some older adults, particularly those with dementia, may have difficulty using this scale. Other tools such as a visual analog scale, numerical scale, pain thermometer scale, and pain faces scale can be helpful.

When possible, use of an interdisciplinary team approach to assessment and management of pain in the elderly is advantageous. These strategies need to be sensitive to cultural and ethnic issues, as well as to values and beliefs of patients and their families. Once etiologic factors are determined and therapy is initiated, a pain log or diary is appropriate to assess effectiveness of treatment. Physicians should encourage patients to record such documentation on a daily basis. Regular reassessment by use of previously administered assessment scales is important and serves to modify therapy to assure an optimal response. Reassessment should include an evaluation of compliance and the presence of adverse drug effects (Figure 2).

Pharmacologic Management of Pain in the Elderly
Even though adverse drug reactions in the elderly are a significant risk, pharmacologic intervention for pain management is the principal treatment modality for pain. Along with considering age-associated changes of pharmacokinetics and pharmacodynamics, physicians must consider the likelihood of drug-drug and drug-disease interactions. Despite these challenges, pain in the elderly can be controlled but most likely will require trials of various agents and careful titration of medication dosages. Because older patients may have increased sensitivity to analgesic medications, lesser dosages may be effective as compared with effective dosages.
Inasmuch as there is still a paucity of clinical trials that focus specifically on elderly patients, information regarding initial and titrating medication dosages may not be available. Therefore, initial doses should be lower and titration should be slower in the elderly. In addition, the general approach should be to start with nonopioid medications for treating patients with mild pain, advancing to opioids for those with moderate to severe pain. The selection of the agent should be determined by targeting the underlying pathophysiology if possible. For example, if pain is due primarily to inflammation, an anti-inflammatory agent should be given. However, if pain is predominantly neuropathic, an anticonvulsant should be used. At times, combinations of analgesics may be required.

Selecting an agent likely to cause the fewest side effects is paramount. Once dosing is initiated, it is essential that primary physicians regularly and carefully monitor for drug side effects and adverse events. The use of placebos is unethical, and placebos should not be used in pain management, a position that the American Osteopathic Association (AOA) endorses in the statement prepared by the AOA End-of-Life Care Committee and appearing in this supplement, beginning on page S2.13

Nonopioid Analgesics
Most mild or moderate pain in the elderly is of musculoskeletal origin and responds well to acetaminophen given around-the-clock. This agent is well tolerated in older patients provided that both renal and hepatic functions are normal. Long-term use of nonsteroidal anti-inflammatory drugs (NSAIDs), because of their association with gastrointestinal bleeding and renal dysfunction, places the elderly at significant risk. Although the likelihood of bleeding is lower with the concomitant use of misoprostol or proton pump inhibitors, misoprostol is not well tolerated in the elderly. For this reason, proton pump inhibitors may be an optimal choice.

Because of their association with a lower incidence of gastrointestinal bleeding, selective cyclooxygenase-2 (COX-2) inhibitors (coxibs) have been viewed as a safer alternative to the other NSAIDs; however, recent concern about their association with heart disease and stroke has dampened their acceptance and resulted in the withdrawal of rofecoxib (Vioxx) from the market. Prolonged use of NSAIDs in the elderly should be avoided whenever possible.

Opioid Analgesics
Administration of opioid analgesics to manage chronic noncancer pain in the elderly has become acceptable; these agents are effective in treating patients with moderate to severe nociceptive pain. True addiction in the elderly is uncommon, and the possibility of addiction should not be used as justification for undertreatment of the elderly for pain.

Morphine sulfate and oxycodone hydrochloride, now available in both short-acting and sustained-release preparations, are commonly used. Short-acting opioids can be used in treatment of patients with intermittent pain, whereas sustained-release opioids should be given for continuous pain (with short-acting preparations available for breakthrough pain). The dosage of sustained-release opioids can be titrated based on the frequency of use of the short-acting preparations. For patients who may not be able to take oral preparations periodically, opioids are available as parenteral, sublingual (buprenorphine hydrochloride), suppository (oxymorphone hydrochloride), and transdermal (eg, fentanyl patch) products.

Physicians should anticipate, prevent, and manage side effects. They should initiate prevention of constipation through the use of stool softeners and other prophylactic bowel regimens whenever opioid therapy is used in the elderly. When opioid therapy is initiated, sedation and delirium are commonplace until tolerance develops. Although respiratory depression occurs uncommonly, tolerance develops rapidly. If needed,

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**Checklist**

- Consider pain as the first vital sign that is best measured by the patient.
- Ask about the presence of pain when examining an older person.
- Console patient for atypical manifestations of pain in the elderly, such as changes in function or gait, withdrawn or agitated behavior, or increased confusion.
- Use standard geriatric assessment tools to evaluate function, affect, cognition, gait, and psychosocial issues.
- Rely on the input of caregivers, particularly in elderly patients with cognitive impairment and communication disorders.
- Do a comprehensive pain assessment evaluating pain quality, intensity, and factors that exacerbate or relieve the pain.
- Use standard pain scales such as a numerical scale, a pain thermometer scale, or a visual analog scale.
- Identify the etiology of pain in the elderly (keeping in mind that it may be multifactorial) by use of geriatric assessment tools, the history and physical examination, and appropriate diagnostic tests.
- Conduct a careful structural examination to identify regions of somatic dysfunction.
- Monitor and measure presence of pain regularly by use of a pain log or diary and by readministering the pain scales to assess the efficacy of the intervention.
Consider age-related alterations of drug metabolism resulting in increased drug sensitivity and adverse reactions while using pharmacologic interventions for pain management in the elderly.

When considering pharmacologic interventions, keep in mind that pain is often unrecognized in the elderly and the elderly are often undertreated for pain.

Start with the lowest possible dose, and proceed slowly to increase dose.

Consider acetaminophen as the drug of choice for mild to moderate musculoskeletal pain.

Nonsteroidal anti-inflammatory drug use should be avoided as much as possible for the treatment of elderly patients who have persistent pain.

Consider opioid analgesics for moderate to severe nociceptive pain in the elderly.

Use sustained-release opioids for continuous pain and short-acting preparations for breakthrough or episodic pain.

Titrate opioid dose based on use of medications for breakthrough pain.

Prevent constipation with opioid use by recommending a prophylactic bowel regimen.

Anticipate and manage opioid side effects such as sedation, confusion, and nausea until tolerance develops.

Avoid the use of opioids that have frequent adverse reactions in the elderly, such as propoxyphene, meperidine hydrochloride, and methadone hydrochloride.

Closely monitor patients on long-term analgesic therapy for side effects and drug-drug and drug-disease interactions.

Consider adjuvant analgesics such as the anticonvulsant gabapentin for the management of neuropathic pain.

Methadone dosage is too low may increase their daily amount, which increases the risk of death from respiratory depression.

Transdermal fentanyl should also be used with extreme caution in the elderly. It has a variable absorption rate in older adults and a long half-life even when the patch is removed. Transdermal fentanyl is contraindicated in opioid-naive patients.

Tramadol hydrochloride, an analgesic that has some opioid properties and is used for mild to moderate pain, should be used with caution in the elderly because it may cause dizziness and reduce the seizure threshold.

Adjuvant Medications

Adjuvant medications are frequently used to treat elderly patients with chronic pain disorders. A number of these medications were developed for purposes other than analgesic use but have been shown to be effective in the management of certain pain syndromes. Anticonvulsants, steroids, topical local anesthetics, and antidepressants are such agents that may be used alone or in combination with nonopioid or opioid analgesics.

Adjuvant medications are particularly useful in managing neuropathic pain. Although tricyclic antidepressants such as amitriptyline hydrochloride and nortriptyline hydrochloride have been used to treat patients with this disorder, anticonvulsants such as gabapentin and carbamazepine are thought to be more effective. In particular, gabapentin seems to be more effective and better tolerated in older adults. Selective serotonin-reuptake inhibitor (SSRI) drugs are effective and well tolerated when used for treating patients with depression, but their efficacy in pain management is not documented.

When selecting an adjuvant agent to treat the elderly for pain, physicians should prescribe medications with the lowest side effect profile for older adults. They should titrate the drug slowly and
assess patients carefully for both effectiveness and the presence of adverse effects. Nonpharmacologic treatments, such as acupuncture and transcutaneous electrical nerve stimulation, have been used for managing pain in the elderly. Osteopathic manipulative treatment involves the use of techniques to reduce pain and enhance functional capacity of older adults with persistent pain. Additionally, an assessment by a physiatrist, physical therapist, or occupational therapist may be helpful, not only for recommending ways to improve muscle strength and avoid dysfunction, but also for identifying the appropriate use of heat, cold, or massage therapy. Both acupuncture and transcutaneous electrical nerve stimulation have been used with modest success for management of persistent pain in older adults.

**Spirituality**

Last, for many patients, there is a spiritual dimension to persistent pain; evidence exists to support spirituality as being helpful to some who are suffering from persistent pain. Appropriate counseling or referral to clergy may be helpful in the management of pain (Figure 4).

**Comment**

The elderly are frequently untreated or undertreated for pain because of barriers to recognition, assessment, and management in such patients. A greater understanding of clinical manifestations of pain, improved methods of assessment, and use of both pharmacologic and nonpharmacologic interventions can result in more favorable outcomes in the treatment of older adults for pain. Osteopathic physicians are uniquely equipped for optimal care of elderly patients with persistent pain by incorporating benefits of manipulative treatment and using holistic and team approaches of osteopathic medicine (Figure 5).

**References**

The use of osteopathic manipulative treatment and the holistic approach of osteopathic medicine in the management of pain in the elderly optimizes care of older patients.

The use of placebos in the management of pain in the elderly is unacceptable, unethical, and unjustified.

Regularly inquire about the presence of pain in the elderly and consider pain as the “fifth vital sign.”

Keep in mind that pain is undertreated, underrecognized, and frequently presents atypically in older adults.

An interdisciplinary, multidimensional approach to assessment, evaluating the physical, structural, functional, and psychosocial aspects of pain, using standard assessment tools is important to appropriate evaluation.

When prescribing medications, be aware of altered drug metabolism with aging and the presence of polypharmacy; when selecting pharmacologic interventions, be aware of the increased frequency of adverse drug reactions in the elderly.

Acetaminophen is an effective analgesic for mild to moderate musculoskeletal pain in the geriatric population and should be considered whenever possible in lieu of medications with higher side effect profiles; long-term NSAID use should be avoided if possible.

Opioid analgesics are effective for chronic pain in the elderly; fear of addiction is exaggerated; side effects must be anticipated and prevented; and skill at dosage initiation, route of administration, and titration is important.

Adjuvant medications such as anticonvulsants and antidepressants are effective in treating elderly patients for neuropathic pain.

Nonpharmacologic approaches such as patient education, cognitive-behavioral therapy, physical therapy, and spiritual interventions should be included in pain management in older adults.


