The Application of Evidence-Based Principles of Care in Older Persons (Issue 4): Pain Management

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DESCRIPTION OF THE PROBLEM

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage.[1] This definition acknowledges the influence of social history, cultural expectations, and individual differences on the perception of pain. The human pain experience is now recognized to involve a complex interaction of sensory, cognitive, and behavioral processes, which age may selectively influence.[2] Pain can be classified into pathophysiologic terms: nociceptive pain, neuropathic pain, mixed or unspecified pain, and pain as a result of psychologic disorders.[2] This classification is useful for identifying the source of pain and provides a framework for treatment.[2]

Acute pain usually is associated with an organic or traumatic cause including postoperative pain or trauma. Acute pain is often a natural physiologic response to injury, useful in warning individuals of diseases or harmful situations. Persistent pain may be defined as a painful experience lasting for a prolonged period of time that may or may not be related to a disease process.[2] Persistent pain can be further classified by pathophysiologic terms, which may help the clinician select therapy and determine outcomes.[2] For the purpose of this article, treatment approaches for acute pain and inflammation; persistent, nonmalignant pain; cancer pain; chronic back pain; osteoarthritic pain; and neuropathic pain will be reviewed. These pain types are encountered in the elderly and in the nursing home setting.[2]

Pain is common among the elderly population.[3] It has been estimated that 45% to 80% of nursing home residents have chronic pain.[4] Factors leading to this high prevalence of pain include age-related disabilities such as osteoarthritis, which if untreated can lead to ongoing pain in the individual resident.[2] In a large retrospective study of over 13,000 elderly nursing home patients with cancer, the Minimum Data Set (MDS), and the Systemic Assessment of Geriatric drug use via Epidemiology (SAGE) database were used to ascertain the prevalence and treatment of pain. Daily pain was present in 24% to 38% of the individuals; 16% received nonopioid medication, 26% received World Health Organization Step-Ladder level 3 opioid medication, and surprisingly 26% received no analgesic medication.[5] These data demonstrate that suboptimal pain therapy is an issue in nursing facilities. Further, in another study of 21,380 nursing home residents aged 65 and older the MDS assessments on pain; analgesics; and cognitive, functional, and emotional status were summarized. Persistent pain as determined using the MDS was identified in 49% of residents with an average age of 83. Persistent pain was prevalent in patients with a history of fractures (62.9%) or surgery (63.6%) in the preceding 6 months, yet 25% received no analgesics. Acetaminophen (37.2%), propoxyphene (18.2%), hydrocodone (6.8%), and tramadol (5.4%) were the most commonly prescribed analgesics. Acetaminophen was usually prescribed on an as-needed basis (65.6%), at doses of less than 1300 mg per day. Nonsteroidal antiinflammatory drugs (NSAIDs) were prescribed at a standard dose more than 70% of the time, and one third of NSAIDs were prescribed as high doses. The authors stated that persistent pain is highly prevalent, and compliance with geriatric prescribing recommendations is suboptimal.[6]

Many factors contribute to suboptimal management of pain, including negative societal attitudes about the use of narcotics by patients, family members, and clinicians; federal and state regulations surrounding the use of narcotic analgesics; and confusion around optimal pain assessment and management in the elderly.[2] Pain is reported to be more prevalent in the elderly than in younger individuals. The degenerative processes that occur in aging and the prevalence of diseases such as cancer, arthritis, and diabetic neuropathy contribute to pain in the elderly.[2] The comorbidity of illnesses increases the likelihood that pain management will be difficult to manage.[4]

Many perceptions exist regarding pain in the elderly. While some have speculated that elderly persons perceive pain differently from younger persons, studies have failed to support any difference.[2] Elderly individuals generally report pain less often than their younger counterparts, despite the greater frequency of conditions associated with pain.[2] Elderly patients may not complain of pain because they fear being labeled as bothersome, hypochondriacal, or addicted. Many elderly are stoic, are slow to respond to pain assessment, and may have

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DOI: 10.1016/j.jamda.2006.12.016

subtle cognitive defects, further disguising their condition or ability to communicate pain.[2]

Multiple barriers to effective pain management are present in the nursing home setting.[2,7,8] The purpose of a recent nursing home pain study was to determine the extent to which residents in pain declined to request pain medication from the staff, and the reasons provided by the residents to explain this behavior. Every 3 months, 20% of the residents in 12 nursing homes were administered a short pain interview, then observed for pain indicators. Medical records were reviewed at the same time for documentation of pain and its treatment. All residents were asked if they had pain (or a synonym of pain) now or in the past 24 hours. They were also asked if they had pain but did not request pain medications and were asked to provide up to 3 reasons for not requesting the medication. A total of 2033 nursing home residents completed pain interviews and/or were observed for pain indicators by trained research assistants. These interviews took place before, during, and after implementation of an intervention to improve pain practices. More than one half of residents (59.5%) reporting pain in the previous 24 hours did not request medication for that pain. Subjects in pain were most likely to state medication concerns or stoicism as the reasons for not requesting pain medication. Concerns about staff reactions to a request or perceptions that the staff was too busy were mentioned frequently by the residents. Subgroup analyses suggested that residents in pain, but not requesting pain medication, were significantly more likely to be in rural rather than urban nursing homes (67.9% versus 52.9%, $P \leq .01$), and white as compared with nonwhite ethnicity (60.6% versus 52.1%, $P \leq .05$). They also tended to be older on average (80.4 ± 12.1 years versus 77.9 ± 12.7 years, $P \leq .01$) than residents who did request pain medication. Finally, residents in pain but not requesting pain medication were significantly more likely to report having both continuous (c) and intermittent (i) pain (71.8% [c + i] versus 61% [c] or 56.5% [i], $P \leq .01$).[8]

Table 1. *Summary of Key Recommendations for Managing Persistent Pain in Older Persons*[2]

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 verbally administered 0 to 10 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.
The use of placebos in clinical practice is unethical and there is no place for their use in the management of persistent pain.
Acetaminophen should be the first drug to consider in the treatment of mild to moderate pain of musculoskeletal origin.
Traditional (ie, nonselective) nonsteroidal anti-inflammatory drugs (NSAIDS) should be avoided in those who require long-term daily analgesic therapy.
Opioid analgesic drugs are effective, associated with a low potential for addiction, and overall may have fewer long-term risks than other analgesic drug regimens in older persons with persistent pain. As with all medication, careful monitoring for the development of adverse side effects is important.
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.

CONSEQUENCES OF UNTREATED PAIN

Untreated and undertreated pain have been shown to be associated with depression, social isolation, immobility, and sleep disturbances in the elderly.[9] The consequences of ongoing pain can negatively impact the health and quality of life in the older adult.[2] Several studies indicate that pain has a significant negative impact on ambulatory older adult's health related quality of life (HRQOL).[10,11] However, few HRQOL data exist in the geriatric nursing home resident. In the Treating of Osteoarthritis in Practice study, researchers surveyed 510 patients aged 60 years or older with arthritis and found that 79% of patients stated that their condition limited their quality of life.[10]

ASSESSMENT

The key to effective and accurate diagnosis, treatment, and monitoring of pain is through a comprehensive initial and ongoing pain assessment.[2,7] Pain assessment in elderly residents is a complex and challenging process that requires a multidimensional approach, including a pain history and physical, functional, and psychological evaluations.[2,7] Both the American Geriatrics Society (AGS) and the American Medical Directors Association (AMDA) guidelines comment on the infrequency of pain assessment, stress the importance of ongoing pain assessment, and include recommendations for pain assessment in cognitively impaired persons.[2,7] A summary of recommendations from the AGS Panel on Persistent Pain in Older Persons is found in Table 1.

The initial assessment of pain should begin with a complete medical history, including a history of trauma and previously used nonpharmacologic and pharmacologic pain treatment, pain duration, and response to therapy.[2,7] If feasible, any known past adverse drug reactions to pharmacologic agents should be documented. [2] The pain history should include an assessment of pain intensity and character.[2,7,12] Subjective and descriptive information should be obtained about the onset, duration, location, radiation, quality, severity, temporal characteristics, and factors that exacerbate or relieve pain.[12]

Several well-developed and clinically validated pain assessment scales are available to help practitioners measure, document, and communicate the resident's pain experience, even among those with mild to moderate cognitive impairment.[2] The verbally administered 0 to 10 scale, pain thermometers, and faces pain scales have acceptable validity in this population.[2] Using the same tool with each assessment and choosing an appropriate scale for the individual patient is important.[13] Additional scales such as the Numerical Pain Rating Scale (NPRS), the Verbal Descriptor Scale (VDS), and the 11-point Verbal Numeric Rating Scale (VNS) are effective in discriminating different levels of pain sensation.[2] There are currently no pathopneumonic biological markers for pain making the patient's report the most accurate and reliable evidence of the existence of pain and its intensity.[14] As such, it is important to address education of the nursing assistants as well as the nursing staff to recognize common symptoms of pain in the elderly. Pain in individuals with mild to moderate cognitive impairment can be assessed with simple questions and screening tools.[15] Direct observation or history from caregivers should be used to assist in assessing pain. Any unusual behavior in a patient with severe dementia should trigger assessment of pain for a potential cause, and observation of pain during movement for pain-related behaviors should be assessed.[2]

Table 2. *Analgesics to Avoid in the Elderly*[18]

Drug	Rationale
Meperidine (Demerol)	Risk for toxicity; safer alternative available
Pentazocine (Talwin)	Risk for toxicity; safer alternative available
Propoxyphene (Darvocet)	Risk for toxicity; safer alternative available
Indomethacin (Indocin)	Risk for toxicity; safer alternative available
Cyclobenzaprine (Flexeril)	Toxic and minimally effective
Amitriptyline (Elavil)	Anticholinergic side effects
Doxepin (Sineqan)	Anticholinergic side effects; sedation
Ketorolac	Increased frequency of adverse events if used for more than 5 days
Mefenamic acid (Ponstel Kapseals)	Higher incidence of side effects
Naproxen	Long half life; safer alternative available
Oxaprozin	Long half life; safer alternative available
Piroxicam	Long half life; safer alternative available

TREATMENT

Effective treatment of pain in the elderly is elusive. While social research has established the prevalence of pain and validated the utility of pain scales in older persons, the paucity of high-quality evidence in pain management contributes to undertreatment. Few randomized controlled trials exist on which to base treatment recommendations. Application of evidence-based principles of pain management relies on the best science available, which may be cohort or case-control trials. In the absence of randomized controlled trials, much pain management is based on consensus guidelines.

Despite the prevalence of painful conditions in the elderly, use of analgesics decline with age, possibly because of underreporting of pain, decreased drug requirements to alleviate pain, or decreased pain perception by the caregiver.[2,6] Effective pain management requires appropriate selections of drug, dose, route of administration, and frequency of administration.[2,7,16] These considerations are particularly important in the elderly because of the high prevalence of altered renal and hepatic functions and of coexisting chronic conditions that require polypharmacy. Adverse effects associated with analgesic drugs, such as nausea, constipation, urinary retention, sedation, confusion, and respiratory depression are more difficult to prevent and manage in the elderly.[2,7] Pain management options are also complicated by significant pharmacokinetic and pharmacodynamic variations among analgesics, the potential for clinically significant drug interactions, intrapatient and interpatient variability, age-related physiologic changes, and preferences specified in an individual's advance medical directives.[2,7] Elderly individuals are also more likely to suffer adverse drug reactions.[2,17] The potential for adverse consequences in the geriatric patient should be considered when choosing an analgesic medication; the clinician needs to be aware of the analgesic agents that are considered unacceptable for use in the elderly because of the potential for heightened adverse consequences.[2,18,19] Table 2 lists some of the agents that should be avoided in the geriatric resident.[18] In addition, with recent clinical studies and the Food and Drug Administration (FDA) emphasizing the potential cardiovascular and gastrointestinal (GI) risks associated with NSAIDs and COX-2 inhibitors, these agents are not considered first line in the elderly, particularly for chronic use, and have been excluded from most of the algorithms.[21]

The effective pharmacologic management of chronic pain in the elderly requires routine (scheduled), versus as-needed dosing.[2,7,16] In addition, because of age-related changes, the elderly may metabolize analgesics differently from younger patients. Thus, starting with a low dose and gradually titrating upward, slowly until significant pain relief is achieved, without intolerable side effects or toxic serum concentrations, is a generally accepted approach when initiating analgesic therapy in the elderly.[2,3,7]

Acute Pain and Inflammation

Standard recommendations for diagnosis and assessment pertain to acute pain and inflammation.[16] These recommendations were used in Fig. 1, which outlines strategies for management of acute pain and inflammation. Non-acetylated salicylates (eg, salsalate, choline magnesium salicylate) and short-acting NSAIDs, ie, ibuprofen, are effective anti-inflammatory agents.[2,6,7] A proton pump inhibitor (PPI) should be initiated with the NSAID for therapy expected to extend beyond 7 days, to decrease the risk of gastrointestinal

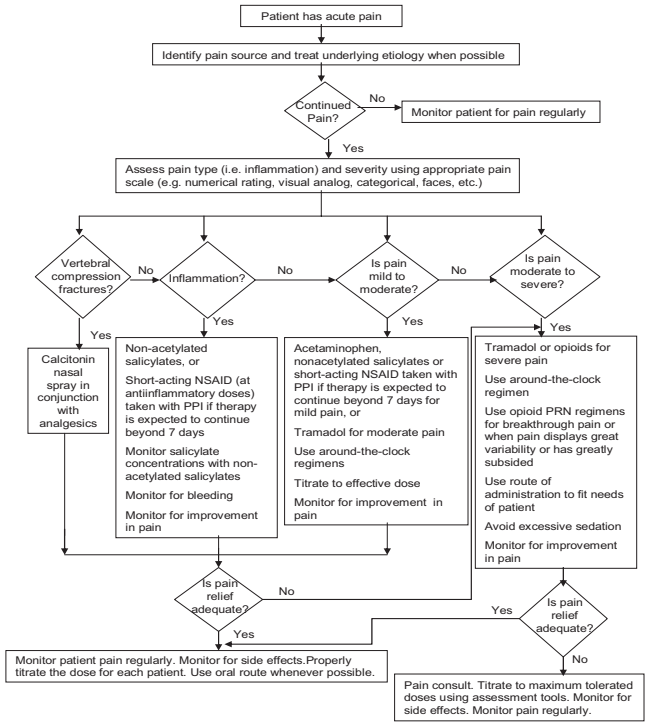

Fig. 1. *Acute pain and inflammation clinical pathway.[2,27] Printed with permission from Omnicare, Inc. Copyright 2005, Omnicare, Inc.*

bleeding.[20,21] Improvement in pain and salicylate serum concentrations should be monitored if using nonacetylated salicylates. If the pain is mild to moderate in intensity but not inflammatory in nature, acetaminophen, nonacetylated salicylates, or a short-acting NSAID, plus a PPI if therapy is expected to last longer than 7 days, are recommended.[2,20–22] Tramadol is a reasonable choice for moderate pain, but should be avoided in patients with seizures.[23,24] Acetaminophen is the agent of choice for noninflammatory pain in the elderly, but because of possible toxicity, in persons with relative deficiencies in glutathione, should be initiated at doses lower than 2.6 g/day.[2] The dose can be titrated to the most effective dose, but not to exceed 4 g/day. The analgesic response (eg, improvement in pain score) should be monitored.[25] Guidelines from the American College of Rheumatology suggest a role for misoprostol in patients treated with NSAIDs who are at risk for GI ulceration.[25] However, effective doses of misoprostol may not be tolerated by older adult patients owing to the high incidence of dose-related diarrhea.[26] PPIs have been shown to be as effective as misoprostol in the prevention of ulceration in chronic NSAID users.[20,21] If during the initial assessment, vertebral compression fractures are thought to be the cause of the acute pain, a trial of calcitonin nasal spray may be beneficial.[27]

Pain that is not controlled, or moderate to severe in nature, can be treated with tramadol, or with opioids for severe pain. Tramadol is a useful analgesic for older adults because, unlike the NSAIDs, it does not exacerbate hypertension or congestive heart failure, nor is it associated with the potential for developing peptic ulcer disease.[24,28] Use of around-the-clock regimens is recommended, but short-acting opioids on an as-needed basis can be used for breakthrough pain, when pain intensity is variable, or has subsided.[2,7,14] If the pain persists, a pain consult should be considered after the analgesic(s) doses have been maximized.

Persistent, Nonmalignant Pain

Uses of multidisciplinary and nonpharmacologic approaches play a key role in the management of persistent, nonmalignant pain as outlined in Fig. 2. If the pain is localized, topical application of lidocaine, capsaicin, aspirin, or eutectic mixture of local anesthetics (EMLA) offer a safe, often effective alternative. If the treatment goal is not met at this point a stepwise approach beginning with acetaminophen, adding or substituting tramadol if opioid therapy is deferred, and finally, initiating a short-acting opioid for episodic pain or a long-acting opioid for continuous pain may be helpful.[2] For patients who need only analgesic therapy, acetaminophen provides comparable analgesia to aspirin, ibuprofen, and naproxen when given at equipotent doses.[22,29] Care should be taken when administering opioids to older adults because of the chance of sedation, confusion, nausea and vomiting, constipation, and respiratory depression.[24] Tramadol has been shown to have efficacy for the treatment of chronic pain at a dose of 650 mg alone or in combination with acetaminophen 75 mg.[28,30,31–33] Although not a regulated

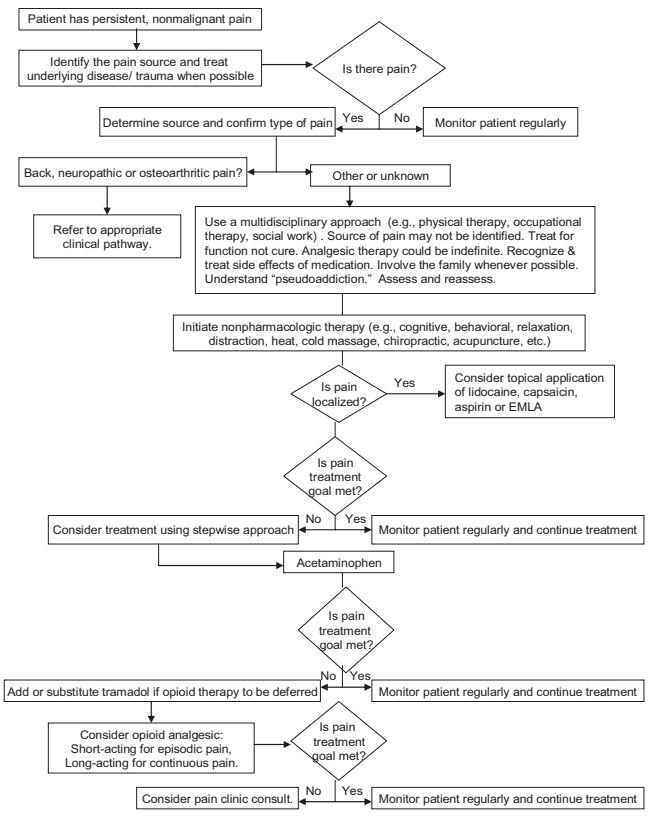

Fig. 2. *Persistent, nonmalignant pain clinical pathway. Printed with permission from Omnicare, Inc. Copyright 2005, Omnicare, Inc.*

narcotic analgesic, tramadol can cause narcotic-related adverse effects including constipation, sedation, and cognitive impairment.[33] Tramadol should be avoided in residents who are predisposed to seizures.[33]

Cancer Pain

The Agency for Health Research and Quality (AHRQ)[34] and the World Health Organization (WHO)[35] have published guidelines for treatment of acute and chronic cancer pain. WHO guidelines use a 10-point pain scale, where mild pain is rated at 1 to 4; moderate pain is 5 to 6; and severe pain is 7 to 10.[35] The WHO recommends a stepped approach to pain therapy, with acetaminophen, aspirin, and NSAIDs as step 1 drugs for mild-to-moderate pain.[35] Maximal doses of drugs, keeping in mind elderly dosage limits, should be used before proceeding to opioid analgesics.[2] Step 2 drugs, such as codeine, hydrocodone, and oxycodone, are employed to treat moderate pain.[35] These drugs are used for moderate rather than mild pain because their side effects may be dose limiting, and they usually are administered and prepared in combination with nonopioid analgesics, such as oxycodone/acetaminophen and hydrocodone/acetaminophen.[35] Morphine is the standard step 3 drug and is used to treat severe pain.[35] When used in pharmacologically equivalent doses, most pure opioids can be used as step 3 drugs. These include morphine, oxycodone, hydromorphone, and fentanyl.[35] Although morphine is considered the gold standard against which the efficacy of other opioids is measured, dosage adjustments are recommended in older adults with moderate renal failure and hepatic insufficiency owing to decreased morphine clearance and hepatic metabolism respectively leading to accumulation of the active 6-hydroxy metabolite.[36,37] Higher-potency opioids are generally reserved for pain that continues to increase or persist.[35]

Fig. 3 and Table 3 summarize principles of cancer pain management for mild, mild/moderate, and moderate/severe pain. In all cases, pain medication is recommended to be administered around the clock with as-needed medications to treat breakthrough pain.[2,34] This recommendation is based on the finding that regularly scheduled medications maintain a more constant level of drug in the body and help prevent pain recurrence.[2,34] The titration of therapy for cancer pain using this method has been shown to provide effective relief for approximately 90% of patients.[35] Sustained release products are recommended for patients stabilized on short-acting analgesics as these formulations offer sustained pain relief.[2] The monitoring and treatment of potential adverse effects should occur along with each pain assessment.[2,35]

On initiation of opioid therapy, nausea and vomiting are common but tolerance develops within a few days of therapy and can be counteracted with a short course of antiemetic therapy.[2] Constipation is a serious adverse effect in older persons that is caused by the activation of mu receptors in the colon. It should be anticipated and preventive therapy initiated, including increased hydration and regular use of a stimulant laxative (eg, senna) and a stool softener (eg, docusate, lactulose).[2]

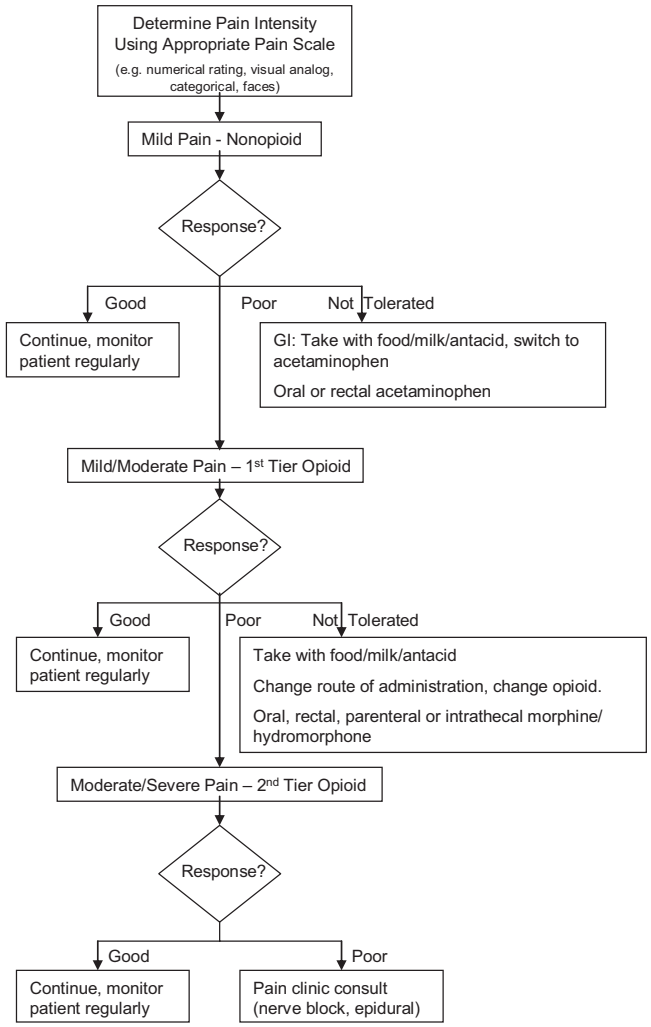

Fig. 3. *Cancer pain clinical pathway.[2,66] ATC = around the clock; GI = gastrointestinal. Printed with permission from Omnicare, Inc. Copyright 2005, Omnicare, Inc.*

Chronic Back Pain

Unfortunately, little sound science guides the choice of drug treatment for chronic back pain, particularly in the elderly. Ruling out underlying causes such as fibromyalgia, depression, autoimmune disorder, or acute injury should occur as a first step when a patient presents with persistent back pain. Fig. 4 outlines the approach for assessing and treating chronic back pain in the elderly. Nonpharmacologic therapy should be initiated if the patient does not have a peripheral neurological deficit. If pain is not resolved, the WHO stepwise can be applied beginning with the use of acetaminophen[38] or nonacetylated salicylates. Adjunctive therapies should be considered, as well as more potent analgesics, such as tramadol alone,[30] or in combination with acetaminophen,[39] and opioid analgesics,[40,41] if monotherapy with acetaminophen or nonacetylated salicylates is not effective.[2] If pain continues despite appropriate analgesic therapies, referral to a pain clinic or surgical consult may be the best option.

Table 3. *Cancer Pain Pathway.*[2,65] *Principles of Therapy*

Mild Pain—Nonopioid
1. Assesses the frequency, duration, occurrence and etiology of the pain on a routine basis.
2. If bone pain is present, use if an NSAID with a PPI is recommended.
3. Maximum daily dose of ibuprofen is 3.2 g/d.
4. Always titrate medication to its maximum before reverting to the next step unless pain is totally out of control.
5. If pain is constant or recurring, always dose ATC.

Mild/Moderate Pain—1st Tier Opioid
1. Assess the frequency, duration, occurrence, and etiology of the pain on a routine basis.
2. If bone pain is present, use of an NSAID with a PPI is recommended as an adjunct to opioid analgesia
3. Maximum daily dose of ibuprofen is 3.2 g/d.
4. Always titrate medication to its maximum before reverting to the next step unless pain is totally out of control.
5. If pain is constant or recurring, always dose ATC.
6. Accurate assessment and history of reported opiae allergy are important. A differentiation between allergy, sensitivity, and side effects needs to be made.
7. Pain management needs to take precedence over other therapies.
8. Fulminating sites, especially in bone, need to be evaluated quickly for alternate therapy, such as radiation/radiopharmaceuticals.
9. Consider adjunctive therapy when appropriate—antidepressant, anticonvulsant; gabapentin up to maximum dose of 3.6 g/d.
10. Treat or prevent adverse effects when they occur or are anticipated (emp, bowel regimen for constipation).

Moderate/Severe Pain—2nd Tier Opioid
1. Assess the frequency, duration, occurrence, and etiology of the pain on a routine basis.
2. Starting dose should be equianalgesic to previous agent and titrated upward or downward.
3. Routine order for bowel regimen.
4. Morphine is the drug most often used in this category:
   - Multiple products available
   - Multiple routes of administration options, such as oral, rectal, IM, SC, IV, epidural, intrathecal, and nebulized
   - A known equipotency between these routes that allows a much easier transition
   - No practical dosage limits; can be titrated to patient response/occurrence of side effects
   - Management should be ATC dosing with sustained-release product and immediate-release product for breakthrough pain
   - If myoclonic jerking occurs, switch to an alternate opioid.
5. Transdermal fentanyl may be appropriate when oral is unavailable once the morphine dose has been stabilized.
6. Use all possible adjuncts to minimize increases in opioid doses.
7. Initial control may require doses higher than those needed in maintenance.
8. Anytime nonpharmacologic options of radiation, chemotherapy, surgical rebuilding, or neurologic interventions are used, a totall reevaluation of all drug treatments needs to be made.
9. Any new report of pain requires reevaluation.

ATC = around the clock; IM = intramuscular; SC = subcutaneous; IV = intravenous.

Osteoarthritic Pain

Osteoarthritis (OA) pain is experienced commonly in older individuals, with more than 80% of people older than 75 exhibiting clinical OA.[42] Many of the same pharmacological principles used in the other pain types are pertinent to the management of OA pain.[43] Figure 5 provides an overview for treating OA in the elderly. Although nonpharmacologic measures are important in the management of OA, most patients require oral agents either alone or in combination to control the pain associated with OA.[43] Intermittent intraarticular corticosteroid injections may be considered if joint effusions are present,[44–46] followed by additional pharmacological treatment using a stepwise approach.[43] Topical analgesic therapy (counterirritants, capsaicin, topical lidocaine), acetaminophen, and nonacetylated salicylates are appropriate analgesic agents for the initial and ongoing treatment of osteoarthritis pain.[43]

The use of NSAIDs and COX-2s in older patients with osteoarthritis is not recommended for several reasons. The pathophysiology of osteoarthritis involves cartilaginous destruction with limited effect of proinflammatory cytokines, unlike rheumatoid arthritis where the joint destruction is highly inflammatory. NSAIDs and COX-2s are associated with both acute upper gastrointestinal hemorrhage and ulceration with established risk factors including age greater than 65 years; prior peptic ulcer disease; prior ulcer-related GI bleeding; concomitant severe cardiovascular illness; coagulopathy; and concomitant use of corticosteroids, anticoagulants, antiplatelet agents, or aspirin.[47] While COX-2s appear to carry a somewhat lower risk of GI complications, older persons are particularly susceptible.[47] Cardiovascular complications of NSAIDs and COX-2s have been analyzed leading to the withdrawal of rofecoxib (Vioxx) and valdecoxib (Bextra) from the market and additional labeling requirements warning of the risk of cardiovascular events for all remaining prescription and over-the-counter NSAIDs and celecoxib.[19,48] Because of the potential for an increased risk of cardiovascular and GI

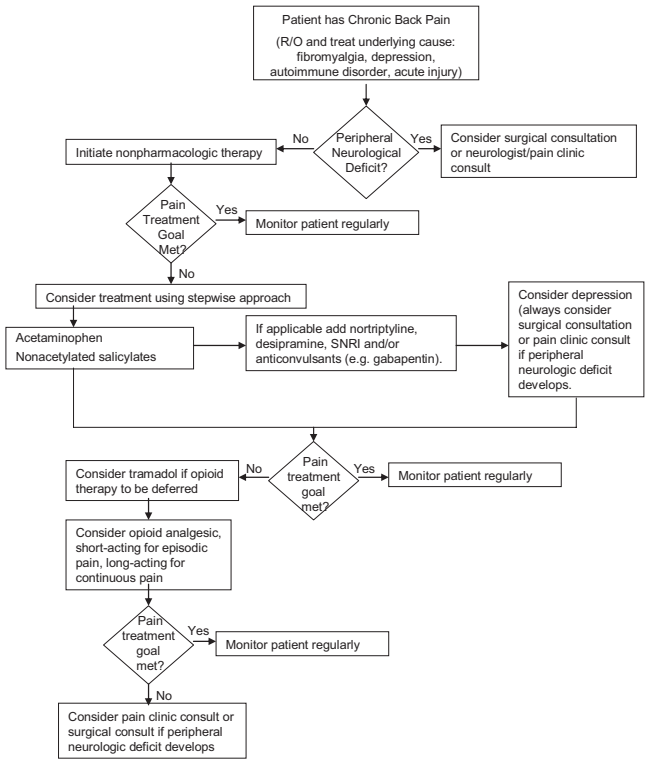

Fig. 4. *Chronic back pain clinical pathway.[2] SNRI = serotonin and norepinephrine reuptake inhibitor (eg, duloxetine). Printed with permission from Omnicare, Inc. Copyright 2005, Omnicare, Inc.*

risks with traditional NSAIDs and COX-2 inhibitors, these agents are not recommended by the Omnicare Pharmacy and Therapeutics Committee for long-term use and are excluded from this clinical pathway.

Tramadol may be considered if pain persists and opioid therapy is deferred.[43] Opioid analgesics (short-acting for episodic pain, long-acting for continuous pain) may be considered if pain is not well managed with non-opioids.[43]

Propoxyphene should be avoided in the elderly, and has been excluded from these clinical pathways.[18] Although propoxyphene possesses analgesic activity, it has been shown to be no more effective than codeine or aspirin and is not recommended for older adults.[18,44] Propoxyphene is estimated to be one half to one third as potent as codeine,[49] and 65 mg of propoxyphene is approximately equianalgesic to 1000 mg of acetaminophen.[50] In addition, repeated dosing of propoxyphene can cause CNS, hepatic, and cardiac toxicity from accumulation of norpropoxyphene, its toxic metabolite.[18,51] Propoxyphene use in nursing home residents increases the occurrence of adverse health outcomes including hospitalizations, emergency department visits, or deaths.[52,53] Despite this, propoxyphene continues to be used frequently and inappropriately.[51,54]

Neuropathic Pain

Neuropathic pain is initiated or caused from injured or dysfunctional nerve fibers in the peripheral or central nervous systems, and examples include diabetic neuropathy, trigeminal neuralgia, post–herpetic neuralgia, and phantom limb pain.[55] Neuropathic pain often responds to different types of analgesic agents than nociceptive pain, and the patient may describe the pain as burning, shooting, searing, or stabbing.[54] Adjuvants display pain-relieving properties in a variety of chronic pain conditions, and have greatest benefit in the management of neuropathic pain.[55] These drugs can be used alone or in combination with nonopioid or opioid analgesics.[67] Fig. 6 outlines appropriate steps in treating neuropathic pain. Topical agents such as lidocaine patches,[56,57] acetaminophen, or nonacetylated salicylates should be considered as first line therapies, followed by the addition of adjuvant therapies such as anticonvulsants (gabapentin, pregabalin), and antidepressants (duloxetine, nortriptyline, or desipramine).[58–61] Although amitriptyline has been shown to be effective in the treatment of neuropathic pain, nortriptyline and desipramine can provide effective pain relief with a lower incidence of adverse anticholinergic effects.[61–63] Tramadol has shown to be effective in treating neuropathic pain.[64] Eradication of neuropathic pain remains a clinical challenge for the clinician. The risks and benefits of any medication used to treat neuropathy must be weighed before therapy is initiated.[2] It may take several trials to find an effective medication or combination of medications.

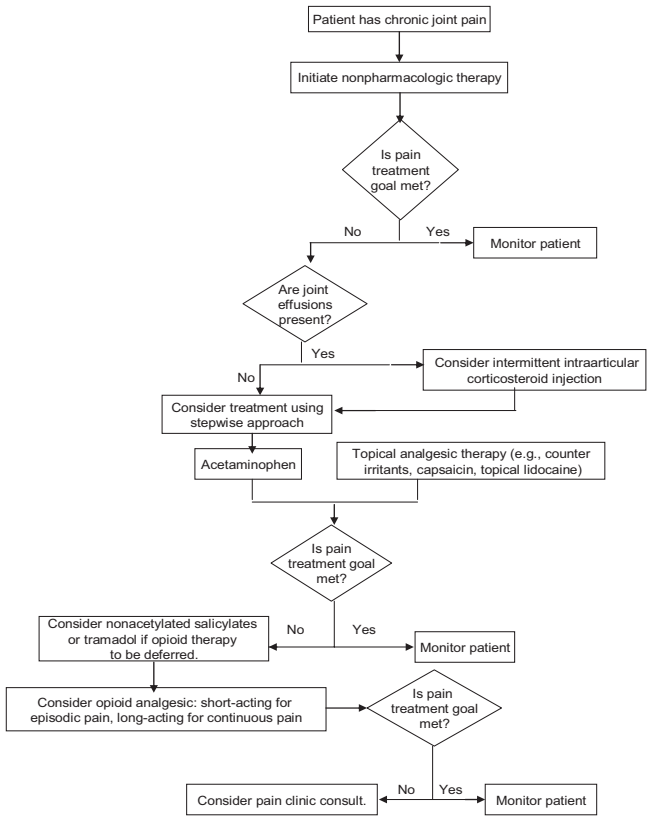

Fig. 5. *Osteoarthric pain clinical pathway.[2] Printed with permission from Omnicare, Inc. Copyright 2005, Omnicare, Inc.*

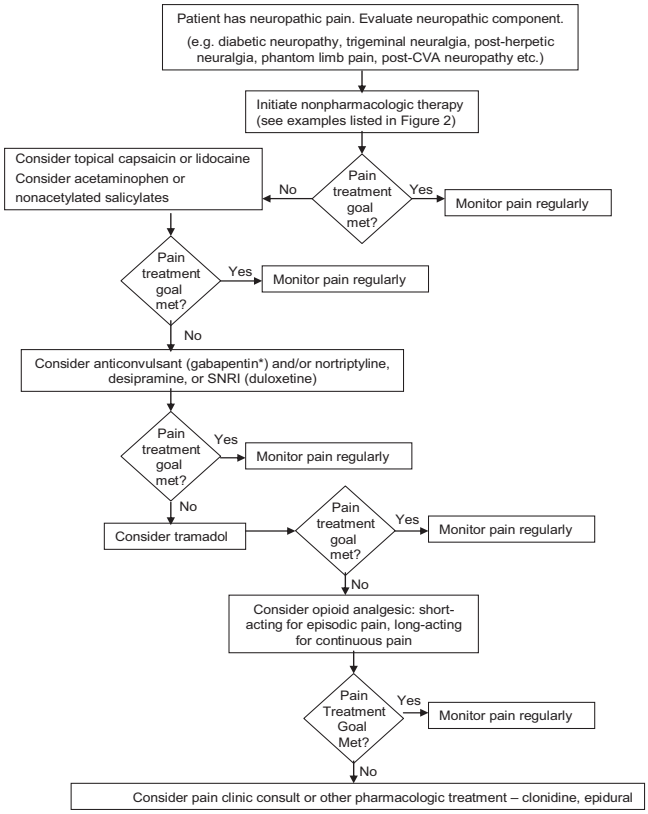

Fig. 6. *Neuropathic pain clinical pathway.[2,67] SNRI = serotonin and norepinephrine reuptake inhibitor. *Gabapentin and morphine combined may achieve better analgesia at lower doses of each. Printed with permission from Omnicare, Inc. Copyright 2005, Omnicare, Inc.*

SUMMARY

A systematic approach to assessment, detection, and early intervention is essential for optimal pain management in the nursing home patient.[2,7,52] The use and implementation of guidelines for the elderly can support the clinician in appropriately treating pain. As the aging American population continues to increase along with the conditions contributing to pain, pain management will become increasingly more important to providing quality health care to the geriatric nursing home resident.

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