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## Pain in Older Adults

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# Pain in Older Adults

Meredith Wallace, PhD, RN, CS-ANP

Pain is a prevailing clinical problem among older adults resulting in systemic agitation and altered quality of life. Although the possibility remains that older adults experience and report less pain, the need exists to objectively evaluate pain in order to provide the most effective pain management. Several standardized tools are available to assess pain in older adults at baseline and at subsequent, frequent intervals. Following an objective assessment, pain may be managed with pharmacologic and nonpharmacologic methods. (*Annals of Long-Term Care: Clinical Care and Aging* 2001;9[7]:50-58)

**P**ain is one of the most prevalent concerns among older adults and those who care for them. A secondary data analysis of all noninstitutionalized persons 65 years and older living in two rural Midwest-

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ern counties (n = 4592) revealed that 86% reported pain in the past year and 59% reported multiple pain complaints.<sup>1</sup> The effects of pain are widespread and include depression, decreased socialization, sleep disturbances, impaired ambulation, and increased health care utilization and costs.<sup>2</sup> Efficient evaluation and management of pain are essential to quality of life in older adults.

Despite the great need for appropriate evaluation and management of pain among older adults, several barriers prevent success in this area. A mail study aimed at uncovering nurses' knowledge and experience with pain and elderly patients revealed that one-third of the nurses believed that pain and discomfort are unavoidable consequences of aging.<sup>3</sup> This research clearly illustrates the need for clinicians, who are caring for older adults, to understand the current information on pain evaluation and management in order to plan and provide the most efficient care. This article begins by describing the pain experience of older adults. A discussion of the evaluation of pain in cognitively impaired and normal cognitively functioning older adults is presented, along with information on commonly used pain assessment instruments. The article concludes with an overview of both pharmacologic and non-pharmacologic pain management strategies.

## THE EXPERIENCE

Many reports have been published regarding whether pain in older adults are simply less reported or if individuals. Dr. Wallace and her colleagues have revealed that pain in older adults is related to aging on the one hand and on the other hand, for example, stated that aging affects the way people. Physically, older adults have the presence of pain in aging. In older adults, that alteration in sensory fibers is reported of pain in a clinical population similar experience. The study determined that pain was present when reported. Pain present could be perceived. Although older adults' pain is subjective reported, it can be treated. Pain barriers in older adults are standing the test of a complicated situation influencing further complications. Studies aimed at cognitive status increased reported pain in cognitively impaired individuals. Depression is related in several ways to the management of depression.

## THE EXPERIENCE OF PAIN IN THE ELDERLY

Many reports are contained in the literature concerning whether older individuals experience less pain or are simply less willing to report pain than younger individuals. Descriptive and quasi-experimental studies have revealed mixed findings. Farrell et al,<sup>4</sup> in reporting on the clinical presentation of pain in older people, stated that both normal and pathologic changes of aging affect the clinical presentation of pain in older people. Physiologic studies on the pain response of older adults have been conducted in attempts to determine the presence and cause of altered pain perception with aging. In one experimental study, the results indicated that alteration in the function of capsaicin-sensitive sensory fibers is a possible cause of decreased subjective reports of pain in older adults and should be regarded as a clinical possibility, warranting further research.<sup>5</sup> In a similar experimental study, Chakour and associates<sup>6</sup> determined that older adults rely primarily on C-fiber input when reporting pain, and cautioned clinicians that pain presentation, diagnosis, and subsequent treatment could be potentially altered.

Although consensus has not been reached on older adults' perception of pain, it is essential that subjective reports of pain and known painful conditions be treated promptly and appropriately. Because of the barriers in studying pain among older adults, understanding the pain sensitivity of older adults remains a complicated problem. The presence of other factors influencing the experience of pain among older adults further complicates pain evaluation and treatment. Studies aimed at determining the influence of cognitive status on the reports of pain revealed that decreased reports of pain should be expected in cognitively impaired elderly patients.<sup>7,8</sup>

Depression and pain were also shown to be correlated in several studies,<sup>9-12</sup> indicating that the treatment of depression should be incorporated into a to-

tal pain management program when necessary. Anxiety and pain were found to be highly correlated in a study conducted by Casten and colleagues.<sup>13</sup> An individualized approach to pain in older adults with a focus on the potential influence of these variables on the perception of pain will result in the most effective assessment and management.

## PAIN EVALUATION

Objective biological markers of pain are not known to exist; therefore, the patient's self-report is the most effective method by which to gather information regarding pain. While subjective reports of pain and investigation into the underlying cause are paramount to efficient assessment and management, objective measurement of pain is the essential next step to take in order to provide effective pain management. There are many standardized tools for objectively assessing pain in older adults. The most frequently used measure of pain evaluation is a numeric rating scale, in which the patient is asked to choose a position on a scale of 1 to 10, with 1 being very little pain and 10 being the worst pain imaginable. However, Weiner and coworkers<sup>14</sup> reported that the abstract design of these scales is challenging for some older adults. Furthermore, such scales have not been found to be reliable in the cognitively impaired population.<sup>15</sup>

Visual analogue scales (VAS) are straight, horizontal 100-mm lines anchored with verbal pain descriptors on the left and on the right. Older adults are asked to indicate a position on the scale that represents their pain (Table I). Herr and Mobily<sup>16</sup> reported a failure rate of 7.1% with the VAS when used among older adults, as well as a poor test-retest reliability. The "Faces Scale" depicts facial expressions on a scale of 0 to 6, with 0 being a smile and 6 being a crying grimace. Studies that have compared simple pain intensity measures have demonstrated reliability and valid-

**TABLE I**

**Examples of Visual Analogue Scales**

|         |   |           |   |               |                                   |             |   |                  |   |                     |
|---------|---|-----------|---|---------------|-----------------------------------|-------------|---|------------------|---|---------------------|
| No Pain |   |           |   |               | Pain as Bad As It Can Possibly Be |             |   |                  |   |                     |
| 0       | 1 | 2         | 3 | 4             | 5                                 | 6           | 7 | 8                | 9 | 10                  |
| No Pain |   |           |   |               | Moderate Pain                     |             |   |                  |   | Worst Possible Pain |
| No Pain |   | Mild Pain |   | Moderate Pain |                                   | Severe Pain |   | Very Severe Pain |   | Worst Possible Pain |

*Reprinted from Acute Pain Management Guideline Panel. Acute Pain Management in Adults: Operative Procedures: Quick Reference Guide for Clinicians. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Dept of Health and Human Services; 1992. AHCPR publication 92-0019.*

ity using varying forms of visual analogue scales in an elderly population.

The ease of procurement and administration of these scales makes them effective for both baseline and frequently repeated pain evaluation. Herr and Mobily<sup>16</sup> recommended that clinicians determine an older patient's preference of pain measurement tool prior to choosing one tool over the other. Factors such as age and physical, emotional, and cognitive condition, as well as the available time and knowledge of the clinician, should be considered when choosing and administering the instrument.

Objectively evaluating pain in cognitively impaired older adults is difficult. One study concluded that current standards of practice that rely on patient self-report of discomfort are not adequate for pain evaluation in confused older adults. Although several of the objective and easily administered scales discussed above may be effective in the cognitively impaired, older population, clinicians should anticipate the likelihood of discomfort when they assist with activities of daily living and should

intervene appropriately.<sup>17</sup> As an alternative, the nine-item Discomfort Scale for Dementia of the Alzheimer's Type (Table II) has been supported as an appropriate instrument for assessing pain in the cognitively impaired.<sup>18</sup>

**PAIN MANAGEMENT**

Pain management is most effective

when pain assessment results in the identification of the underlying cause of pain. In addition, it is necessary to distinguish acute pain from chronic pain in order to plan appropriate management strategies. Short-term postsurgical pain is likely to require aggressive, yet far different pain management strategies from chronic arthritis pain in the older patient.

The most common method of pain management among older adults is the use of medications, including nonopioid drugs such as acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs), and opioids (Table III). However, managing pain in older adults with these medications is challenging because of the frequently observed adverse reactions and analgesic sensitivity. Popp and Portenoy<sup>19</sup> reported that safe, effective use of analgesic drugs in the elderly requires in-depth knowledge of age-related changes in pharmacokinetics and pharmacodynamics. A decline in the therapeutic index of most medications among older adults further complicates effective pain management because often little time exists between the onset of favorable and ad-

**TABLE II****Discomfort Scale for Dementia of the Alzheimer's Type****Noisy Breathing**

| 0   | 1 | 2 | 3 |
|---|---|---|---|
| Negative sounding noise on inspiration or expiration; breathing looks strenuous, labored, or wearing; respirations sound loud, harsh, or gasping; difficulty breathing or trying hard at attempting to achieve a good gas exchange; episodic bursts of rapid breaths or hyperventilation. |   |   |   |

**Negative Vocalization**

| 0   | 1 | 2 | 3 |
|---|---|---|---|
| Noise or speech with a negative or disapproving quality; hushed low sounds such as constant muttering with a guttural tone; monotone, subdued, or varying pitched noise with a definite unpleasant sound; faster rate than a conversation or drawn out as in a moan or groan; repeating the same words with a mournful tone; expressing hurt or pain. |   |   |   |

**Content Facial Expression**

| 0   | 1 | 2 | 3 |
|---|---|---|---|
| Pleasant, calm-looking face; tranquil, at ease, or serene; relaxed facial expression with a slack unclenched jaw; overall look is one of peace. |   |   |   |

**Sad Facial Expression**

| 0  | 1 | 2 | 3 |
|--|---|---|---|
| Troubled-looking face; looking hurt, worried, lost, or lonesome; distressed appearance; sunken, "hang dog" look with lackluster eyes; tears; crying. |   |   |   |

**Frightened Facial Expression**

| 0  | 1 | 2 | 3 |
|--|---|---|---|
| Scared, concerned-looking face; looking bothered, fearful, or troubled; alarmed appearance with open eyes and pleading face. |   |   |   |

**Frown**

| 0   | 1 | 2 | 3 |
|---|---|---|---|
| Face looks strained; stern or scowling looks; displeased expression with a wrinkled brow and creases in the forehead; corners of mouth turned down. |   |   |   |

**Relaxed Body Language**

| 0  | 1 | 2 | 3 |
|--|---|---|---|
| Easy, openhanded position; look of being in a restful position; may be cuddled up or stretched out; muscles look of normal firmness and joints are without stress; look of being idle, lazy, or "laid back"; appearance of "just killing the day"; casual. |   |   |   |

**Tense Body Language**

| 0   | 1 | 2 | 3 |
|---|---|---|---|
| Extremities show tension; wringing hands, clenched fist, or knees pulled up tightly; look of being in a strained and inflexible position. |   |   |   |

**Fidgeting**

| 0  | 1 | 2 | 3 |
|--|---|---|---|
| Restless impatient motion; acting squirmy or jittery; appearance of trying to get away from hurt area; forceful touching, tugging, or rubbing of body parts. |   |   |   |

*Adapted with permission from Hurley AC, Volicer BJ, Hanrahan PA, et al. Assessment of discomfort in advanced Alzheimer patients. Res Nurs Health 1992;15:369-377.*

verse drug effects. The old cliché “start low and go slow”<sup>2</sup> is an appropriate rule for the administration of pain medications in older adults. For the most effective pain management, medications should be given on a regular basis, with extra doses added during treatment and during activities that are likely to result in pain.<sup>2</sup>

NSAID use among older adults is an effective pain management strategy, but is not without complications. Such medications should be used selectively in the elderly population because of the risk of side effects. Skander and Ryan<sup>20</sup> revealed that NSAIDs contribute to ulceration and can mask pain that leads to ulcer diagnosis. In addition, elderly patients are at risk for developing indomethacin-related renal dysfunction. The addition of misoprostol, histamine<sub>2</sub> receptor antagonists, proton pump inhibitors, and antacids has been supported as adjuncts to NSAIDs in the elderly. However, these medications are not entirely effective in alleviating the risk of side effects with NSAID use.<sup>2</sup> Protective medications are not without effects, and the harm must be weighed against the potential benefit. NSAIDs should be used with caution in older adults and may be replaced by acetaminophen when appropriate because of the high risk of renal and gastrointestinal side effects in the older population.

The use of opioid medication to manage pain has become a popular and effective method for older adults. Ferrell and associates<sup>21</sup> concluded that through appropriate pain management with pain therapies, such as controlled-release analgesics, clinicians may greatly enhance the quality of life for cancer patients. In addition, clinicians should work with patients to control medication side effects so that the maximum benefit is obtained from the narcotics.

Importantly, older adults have been found to respond to morphine as if they had been given a larger dose, suggesting the need to decrease morphine dosages in older adults. It is recommended that older patients

be managed on an individual basis, titrating dose and frequency according to their systemic requirements. Age should be a factor in choosing the initial dosing frequency. Despite the effectiveness of morphine in managing pain among older adults, this medication has frequent side effects in this population. Findings from one study suggest that older adults' use of opioid medication during the time of hip fracture impaired psychomotor function.<sup>22</sup>

The complexity of pain management and the presence of confounding variables in older adults often necessitate the use of collaborative pain medications. These medications may include antidepressants, anticonvulsants, and anxiolytics. These medications are listed in Table III.

The delivery of pain medication in older adults presents several challenges. The physiologic changes of the aging body as well as the medication distribution should be considered when deciding upon a route of administration. Changes in gastrointestinal absorption among older adults may delay the therapeutic effectiveness of medications given by mouth. In addition, subcutaneous administration of pain medication such as morphine may allow it to be absorbed more quickly because of the decreased fat layer through which the medication will be absorbed. Administration of medication, such as meperidine through the intramuscular route, is often difficult because of the decreased muscle mass that is common in the elderly. Little research is available to support the use of one method over another in the older adult population. The dosages of intravenous pain medication, administered by a nurse or through patient-controlled analgesia, must be calculated for older adults.

Nonpharmacologic pain management has become standard among those caring for older adults, and includes relaxation, transcutaneous electrical nerve stimulation (TENS), exercise, education, cogni-

**TABLE III**

**Pain Management Medications**

| Opiate Analgesic Drugs               |                                 |   |   |  |
|--------------------------------------|---------------------------------|---|---|--|
| Drug                                 | Oral Equivalent Dose            | Starting Dose   | Aging Effects   | Precautions and Recommendations  |
| Morphine sulfate                     | 30 mg                           | 15-30 mg q 4 hr   | Immediate half-life; elderly people are more sensitive to side effects than are younger people  | Start low and titrate to comfort; continuous use for continuous pain; intermittent use for episodic pain; anticipate and prevent side effects. |
| Sustained-release* morphine          | 30 mg                           | 15-30 mg q 12 hr or 24-hr equivalent of total prior analgesics in divided doses q 12 hr | q-12-hr doses tolerated well, rarely requires q-8-hr dosing   | Escalate dose slowly because of possible drug accumulation. "Immediate-release."   |
| Codeine                              | 120 mg                          | 30-60 mg q 4-6 hr   | Acetaminophen/NSAID combinations limit maximum dose; constipation is a major issue  | Avoid high doses; begin bowel program early.   |
| Hydrocodone                          | 30 mg                           | 5-10 mg q 3-4 hr  | Acetaminophen/NSAID combinations limit maximum dose; toxicity similar to morphine   | Avoid high doses; anticipate and prevent side effects; begin bowel program early.  |
| Oxycodone                            | 20-30 mg                        | 5-10 mg q 3-4 hr  | Acetaminophen/NSAID combinations limit maximum dose; toxicity similar to morphine   | Avoid high doses; anticipate and prevent side effects; begin bowel program early.  |
| Sustained-release* oxycodone         | 20-30 mg                        | 10-20 mg q 12 hr or 24-hr equivalent of total prior analgesics in divided doses q 12 hr | Similar to sustained-release morphine   | "Immediate-release" oxycodone often necessary for breakthrough pain.   |
| Hydromorphone                        | 7.5 mg                          | 1.5 mg q 3-4 hr   | Half-life may be shorter than morphine (3 hr); toxicity similar   | Similar to morphine; start low and titrate to comfort; give continuously (q 3-4 hr) for continuous chronic pain disorders.                     |
| Transdermal fentanyl                 | NA (see package insert)         | > 25 mcg/hr not recommended in opioid-naïve patients                                    | Effective activity may exceed 72 hr in elderly (transdermal patches designed for 3-day duration of action)                                      | Titrate slowly using immediate-release analgesics for breakthrough pain.   |
| Nonsteroidal Anti-Inflammatory Drugs |                                 |   |   |  |
| Drug                                 | Maximum Dose                    |   | Pharmacologic Changes   | Precautions and Recommendations  |
| Acetaminophen**                      | 4000 mg/24 hr (q 4-6-hr dosing) |   | Hepatotoxic at high dose  | Keep dose to less than 4 g/24 hr.  |
| Aspirin**                            | 4000 mg/24 hr (q 4-6-hr dosing) |   | Gastric bleeding; abnormal platelet function  | Avoid high doses for prolonged periods of time.  |
| Ibuprofen#                           | 2400 mg/24 hr (q 4-6-hr dosing) |   | Gastric, renal, and platelet abnormalities may be dose-dependent; constipation, confusion, and headaches may be more common in elderly patients | Avoid high doses for prolonged periods of time.  |

**TABLE III CONT.**

|   |                                     |   |  |
|---|-------------------------------------|---|--|
| Naproxen <sup>#†</sup>                        | 1000 mg/24 hr<br>(q 8-12-hr dosing) | Similar toxicity to ibuprofen   | Avoid high doses for prolonged periods of time.                    |
| Choline magnesium trisalicylate <sup>‡¶</sup> | 5500 mg/24 hr<br>(q 8-12-hr dosing) | Prolonged half-life of 8-12 hr; similar toxicity to ibuprofen; classic salicylate toxicity may develop at high dose | Salicylate levels may be occasionally necessary to avoid toxicity. |

**Adjuvant Analgesic Drugs**

| Drug  | Starting Dose                           | Specific Indications  | Pharmacologic Changes  | Precautions and Recommendations  |
|---|---|---|--|--|
| Corticosteroids<br>Prednisone   | 2.5-5 mg daily                          | Inflammatory disease  | Increased risk of hyperglycemia, osteopenia, and Cushing effects   | Avoid high dose for long-term use.   |
| Tricyclic antidepressants<br>(amitriptyline, desipramine, imipramine, nortriptyline, doxepin) | 10 mg hs                                | Neuropathic pain, sleep disturbance                                 | Increased sensitivity to side effects, especially anticholinergic effects  | Monitor carefully for anticholinergic adverse effects. Desipramine may be as effective as amitriptyline with fewer side effects. Start at lowest available dose, 10 mg, and titrate hs dose upward by 10 mg every 3-5 days.  |
| Anticonvulsants<br>Clonazepam<br>Carbamazepine  | 0.25-0.5 mg<br>100 mg                   | Neuropathic pain<br>Only for lancing pain, eg, trigeminal neuralgia | Can cause somnolence, ataxia, dizziness; leukopenia, thrombocytopenia, and rarely aplastic anemia                              | Start at 100 mg qd, increase slowly bid, 200 mg qd, then bid; check LFTs and CBC at 2, then 8 wk.  |
| Gabapentin  | 100 mg                                  | Neuropathic pain  | May prove to have less serious side effects than carbamazepine   | Start with low dose (100 mg) and titrate up slowly to effect; neuropathic doses not yet established. Titrate to tid dosing. Monitor for idiosyncratic side effects, eg, ankle swelling, ataxia. Dose range for efficacy anecdotally reported between 100 and 800 mg tid. |
| Local oral anesthetics<br>Mexiletine  | 150 mg                                  | Neuropathic pain  | Side effects such as tremor, dizziness, unsteadiness, paresthesia are common; rarely hepatic damage and blood dyscrasias occur | Avoid use in patients with preexisting heart disease. Start with low dose and titrate slowly; recommend initial and follow-up ECGs.  |
| Intravenous anesthetics<br>Lidocaine  | 3-5 mg/kg<br>infused every<br>15-30 min | Diagnostic test   | Delirium common  | May be useful practice for response to mexiletine or other oral local anesthetic for neuropathic pain. Diagnostic test only in a monitored environment where seizure, delirium, airway control, and hemodynamic alterations can be managed.                              |
| Other agents<br>Baclofen  | 5 mg                                    | Neuropathic pain, muscle spasms                                     |  | Monitor for weakness, urinary dysfunction. Avoid abrupt discontinuation due to CNS irritability.   |

NSAID = nonsteroidal anti-inflammatory drug; LFT = liver function test; CBC = complete blood count; ECG = electrocardiogram; CNS = central nervous system.

\*These preparations are NOT to be broken, crushed, or dissolved. They must be used as formulated to provide continuous-release activity.

†Available in liquid form; ‡Available in suppository form; ¶Minimum platelet dysfunction.

Adapted with permission from the American Geriatrics Society. The management of chronic pain in older persons: AGS Panel on Chronic Pain in Older Persons. *J Am Geriatr Soc* 1998;46:635-651.

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tive-behavioral group therapy, and other creative techniques. Middaugh et al<sup>23</sup> tested biofeedback-assisted relaxation in a quasi-experimental study of older adults, and concluded that older patients responded well to the biofeedback/relaxation training component of a multimodal pain program, indicating effectiveness in decreasing pain. TENS has been studied as a method in which to control pain in the elderly. Thorsteinsson<sup>24</sup> indicated that TENS is an effective method of pain relief in elderly patients and should be integrated into an overall pain management plan.

Exercise has been noted as an effective nonpharmacologic pain management strategy when used by older adults. In a descriptive study of one group of older adults with osteoporosis, 80% complied with the program, resulting in improved general well-being, stamina, mobility, and pain tolerance.<sup>25</sup> Dexter<sup>26</sup> further concluded that exercise is an effective method by which to reduce pain and increase mobility. However, less than 10% of older adults who were advised to exercise did so in a manner that might be expected to achieve maximum therapeutic benefit. Older adults need to be motivated to take part in a therapeutic exercise program that they enjoy in order to obtain the best treatment adherence.

Puder<sup>27</sup> evaluated the effectiveness of a 10-week cognitive-behavioral group therapy training program for chronic pain. The program was designed to help participants understand pain as a controllable experience. The methods used to achieve this control included progressive muscle relaxation, deep breathing exercises, attention-focusing and imagery-based pain control, and problem-solving strategies. The researchers concluded that the cognitive-behavioral training program was an effective method of decreasing the impact of pain on activities of daily living, and they recommended the program for adults of all ages.

Ferrell and colleagues<sup>28</sup> conducted a quasi-experimental study to test the effect of a pain education intervention on older cancer patients residing at home. The researchers concluded that pain education should become an essential part of the plan of care for the effective management of older adults with chronic illnesses. A prime barrier to the effective evaluation and management of pain is the lack of importance placed on pain education in nursing and medical schools.<sup>29,30</sup>

### SUMMARY

Pain is a prevailing clinical problem among older adults that results in systemic agitation and altered quality of life. Although the possibility remains that older adults experience and report less pain, the need exists to objectively evaluate pain in order to provide effective pain management. Several standardized tools are available to assess pain in older adults at baseline and at subsequent, frequent intervals. Following an objective assessment, pain may be managed with pharmacologic and nonpharmacologic methods. Evidence exists demonstrating the effectiveness of NSAIDs, and of opioids when used cautiously with older adults, and also of nonpharmacologic interventions to manage pain in the elderly.

The problem of pain in older adults is an ongoing concern in need of further clinical investigation. Maintaining comfort and promoting independent function are the benchmarks of gerontological clinical practice. While pain experts perceive the need for a multidisciplinary approach to this difficult older adult problem, nursing must take the lead in coordinating an organized approach to the evaluation and management of pain in this population. In this way, pain may be most effectively evaluated and managed, and older adults will be able to maintain the highest possible quality of life.

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- at usual