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## Pain Management in Dementia Patients in Nursing Homes

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### Abstract

Pain in the elderly, especially those with dementia, is often undertreated and misdiagnosed by health care professionals in the long-term care setting. Communication barriers in patients with cognitive impairment force pain assessment to rely heavily on subjective interpretation of behavioral factors due to the inability of patients to self-report pain symptoms. It is important for clinicians to develop a standard method of identifying and assessing signs of pain in patients with dementia in order to appropriately treat those experiencing discomfort. Patients with dementia who present with a sudden onset of behavioral changes should receive a comprehensive evaluation that includes a patient questionnaire, standardized pain assessment scale, an observational method of assessment and family member or caregiver interviewing to assess if these changes in behavior could be a result of undiagnosed pain. Proper differential diagnosis of symptom presentation is the only way to ensure that cognitively impaired patients receive the correct diagnosis and treatment to resolve the underlying cause of symptomatology.

### Key Terms

Dementia; Nonverbal; Nursing Homes; Pain; Pain Scores

### Introduction

The U.S. Census Bureau projects the population aged 65 years and older to nearly double by 2050, with a significant increase in the cohort of individuals aged 85 years and older.<sup>1</sup> Increasing life expectancy is attributed to overall improved management of chronic disease states, medical innovations, and advances in the health care system. Secondary to this anticipated population increase, the number of nursing home residents is expected to double by 2030, reaching more than 3 million long-term care residents.<sup>2</sup> The nursing home setting presents an opportunity for residents to receive management of their chronic health conditions, in conjunction with palliative care such as pain management. Reportedly up to 80 percent of nursing home residents have unmanaged, mismanaged or undermanaged pain resulting in functional impairment and decreased quality of life.<sup>3</sup> There is a great need for health care professionals to step in with a structured system to assess, manage and treat pain.

The need for improved pain management within the nursing home setting can be attributed to multiple barriers including system, clinician and patient factors.<sup>4</sup> System barriers can be attributed to the large number of nursing home residents and the facility challenges of providing adequate health care staff and resources to serve this increased patient base. Additionally, ensuring that all health care staff are trained and adequately educated in appropriate pain assessment and

treatment strategies is an issue faced at many nursing facilities.<sup>2,3</sup> Secondary complications from advanced diseases and their treatments are often challenging for the health care staff to anticipate and address with appropriate medical interventions. Patients may not always report their pain for multiple reasons including denial of a worsening condition, fear of addiction or dependence to prescribed medications or simply not wanting to be a "bother" to the staff. Patients with some form of cognitive impairment may not be able to adequately notify the health care staff at the facility if they have pain. Regardless of the reason, when pain is not reported by the patients to the health care staff it goes unrecognized, and access to appropriate treatment is not provided. Consequently, pain is not managed optimally.

### Pain in Dementia

There are several causes of pain in nursing home patients including immobility due to dementia, cancer, arthritis, tendonitis, neuralgia, surgery, circulatory problems, bowel disorders and falls.<sup>2</sup> Patients diagnosed with dementia have a high prevalence of pain and present many challenges for pain assessment. During moderate-advanced stages of dementia, the patient's ability to verbalize and self-report pain is impaired while immobility contributes to the overall presence of pain. Access to the patient's past medical history can serve as a valuable resource to determine the etiology of the patient's pain. For example, a past injury may be causing present pain. Utilizing patient charts to obtain a patient's history can help health care professionals efficiently identify potential pain sources. Family members and other caregivers are a valuable source of not only historical information but can provide clarity regarding recent health-related complications and injuries.

As dementia progresses in severity, symptoms other than cognitive impairment begin to develop and further complicate pain assessment strategies. These symptoms are identified as behavioral and psychological symptoms of dementia (BPSD) and are present in more than half of patients with dementia.<sup>5</sup> This refers to any form of disinhibited behavior, delusions, hallucinations, aggression, agitation, anxiety and depression.<sup>6</sup> Patients with dementia who cannot clearly articulate the presence of discomfort or pain often express these issues through behaviors which can closely mirror behaviors observed in BPSD. Common pain behaviors include grimacing, sighing, moaning, verbal agitation, guarding, aggressiveness, withdrawal, sleep changes and increased confusion.<sup>7</sup>

Adequately assessing and treating pain in patients with dementia can be difficult because communication barriers prevent the caregiver's ability to obtain information by self-reports. Assessments must rely heavily on observational

measures and the subjective interpretation of patient behaviors. In nonverbal patients, pain symptoms are commonly mistaken for normal behavioral symptoms associated with dementia such as agitation and anxiety or BPSD. This misinterpretation often leads to the inappropriate use of antianxiety and antipsychotic medications instead of utilizing the appropriate pain therapy options.<sup>8</sup> See Table 1 for pharmacologic pain treatment options.

### Differential Diagnosis

Any sudden changes in behavior may be classified as delirium and indicate the need for further investigation. Delirium is a medical condition characterized by acute confusion or other disturbances in mental function and behavior.<sup>9</sup> Compared to dementia, which is associated with a slow decline in memory and mental status over a period of months or years, episodes of delirium consist of rapid-onset confusion or changes in behavior appearing over the course of days or weeks. Symptoms of delirium can also fluctuate in appearance throughout the day.<sup>10</sup> These changes are common presentation factors for patients experiencing pain caused by an infection and can also be precipitated by adverse reactions to medications, stroke or other head injury and abrupt withdrawal of a medication, nicotine or alcohol. If pain is suspected to be the causal factor of behavioral changes, initiation of a limited trial of analgesic therapy should be considered while ruling out all other causes.<sup>11</sup> Recommendation of an analgesic agent should be based on the type of pain identified by self-reports and observational measures.

### Determining Pain Types

Determining and understanding the types of pain are critical in order to identify pain early and treat it adequately. Noting potential sources through patient history can be extremely helpful in determining the type of pain in patients with dementia. There are two main pain types: neuropathic pain or nociceptive pain.<sup>12</sup> Neuropathic pain manifests as burning, tingling, shooting, radiating pain.<sup>4</sup> Recent data indicates that neuropathic pain is by far the most undertreated type of pain in patients with dementia.<sup>12</sup> Contrastingly, nociceptive pain typically presents as sharp, aching or throbbing pain also known as somatic pain. However, nociceptive pain can also present as dull, pressured pain in the organs which is known as visceral pain. Determining the type of pain is challenging in patients with dementia. Attention to detail is essential regarding evaluation of the patient's movement, past medical history and eliciting information from the caregivers. Close observation of activities of daily living and limitations in engagement, as well as nonverbal cues of pain, can serve as an indication of the source of the pain. For example, if a patient grimaces when his or her leg is shifted to get into a bathtub, the pain source is likely in the leg.

### Pain Assessment

In the general population, pain assessment techniques are an essential tool in recognizing pain, assessing the intensity and type of pain, and choosing a successful management and treatment strategy. In patients with mild-moderate dementia, the ability to self-report may remain intact and is therefore the gold standard of pain assessment.<sup>4</sup> A valid patient

history can be established through use of the pain assessment mnemonic SOCRATES:

- Site
- Onset
- Character
- Radiation
- Association
- Time course
- Exacerbating/Relieving factors
- Severity

By assessing these eight characteristics of pain, health care professionals are able to gain insight into the site of pain and pattern of muscle and joint involvement. Determining if the onset was gradual or sudden, how the pain changes over time, whether the pain is dull, sharp, stabbing, aching, or burning, if the pain radiates from one part of the body to another, the timing and association with activities, and other features that come with the pain is essential. A patient's description of pain can be extremely helpful for clinicians in the process of choosing appropriate treatment.

Another useful tool commonly used in patients able to communicate effectively is the Edmonton Functional Assessment Tool (EFAT).<sup>4</sup> The EFAT gives patients the ability to quantify pain using a 0 to 10 scale where 0 equals no pain and 10 equals most severe pain. This tool can also be used to quantify other aspects of a patient's health such as nausea, appetite or sleep. Quantification gives clinicians a clearer idea of the pain they are strategizing to treat. However, as mentioned above, many patients in later stages of dementia are unable to verbally describe pain. This presents a challenge for clinicians and requires use of other methods of pain assessment.

A variety of pain scoring methods exist for nonverbal patients that can be utilized to assess physical symptoms, psychological symptoms and function.<sup>13</sup> For example, the Abbey pain scale is a validated tool commonly utilized in Australia to measure pain in patients with dementia who cannot verbalize. The scale looks at six nonverbal components in order to calculate a "total pain score." The six components are vocalization, facial expression, change in body language, behavioral change, physiological change and physical change.<sup>14</sup> There are several nonverbal cues of pain, and it is important for nursing home staff to be watchful for these. The Abbey pain scale is especially useful because it lists these nonverbal cues, making clinicians more aware of their significance and potential indication of pain. Some examples of common nonverbal cues of pain that the Abbey pain scale notes are grimacing, whimpering, crying, fidgeting, increased confusion, refusal to eat, perspiration, flushing, pallor or vital signs outside of normal limits. Pain within the dementia population is quite often confused with agitation or anxiety and is not appropriately approached. It is difficult, yet critical, for clinicians to recognize the nonverbal actions that could be indicating pain in order to provide the care that patients with dementia need for comfort. Other direct observational scoring tools useful in assessing pain in nonverbal patients or patients with cognitive impairment and reduced consciousness include the Face, Legs, Activity, Cry and Consolability

Table 1. Selected Medications Used to Manage Pain.<sup>16-24</sup>

Class	Medication	Type of Pain	Renal Adjustment
Nonopioids	Ibuprofen	Mild Nociceptive	Yes
	Naproxen	Mild Nociceptive	Yes
	Acetaminophen	Mild Nociceptive	Yes
Mild Opioids	Hydrocodone/ Acetaminophen	Moderate Nociceptive	Use with Caution
	Oxycodone/ Acetaminophen	Moderate Nociceptive	Use with Caution
	Codeine/ Acetaminophen	Moderate Nociceptive	Yes
Strong Opioids	Morphine	Severe Nociceptive	Yes
	Fentanyl	Severe Nociceptive	Yes
	Methadone	Severe Nociceptive	Yes
Anticonvulsant/Analgesic	Gabapentin	Neuropathic	Yes
	Pregabalin	Neuropathic	Yes

(FLACC) scale, Pain Assessment in Advanced Dementia (PAINAD) scale, and the Mobilization Observation Behavior Intensity Dementia (MOBID) pain scale, which evaluate aspects of patient behavior through monitoring and observation of activities of daily living similarly to the Abbey pain scale.<sup>4,15</sup> Physical examinations with focus on the musculoskeletal and nervous systems should be done regularly in nursing home patients to help diagnose pain.<sup>3</sup> Necessary components of physical examinations include palpation for inflammation and trigger points from muscle strain, tendonitis, and nerve irritation, as well as physical maneuvers that can reproduce the pain such as straight-leg raises and joint movements. Neurologic examinations should also be performed routinely with special attention to autonomic, sensory and motor deficits that may suggest neuropathic conditions. In order to maximize quality of life and mobility, functional status should be evaluated regularly through activities of daily living, ambulation and psychosocial status. Functional status is likely to correlate with the presence and significance of pain.

### Conclusion

In patients with cognitive impairment, a thorough evaluation of behavioral changes should occur before any pharmacological interventions occur. The American Society for Pain Management Nursing's Task Force recommends a comprehensive, step-wise approach to assessing pain in older adults with dementia.<sup>11</sup> Health care professionals should first attempt to obtain self-reported information on symptoms by asking the patient questions about the presence of pain. A standardized evaluation tool such as the numeric rating scale (NRS) should be implemented, followed by the utilization of

an observational tool such as the PAINAD. Finally, family members and caregivers should then be questioned about the current behavior to determine if the patient's actions differ from normal individual composure.

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