Difficulties in Managing Pain at the End of Life

The lack of verbal, behavioral, and physiologic cues does *not* mean that pain is absent. For most people who are dying, pain relief is an attainable goal but may require sedation.

By Joan T. Panke, MA, APRN

Andrew Zimmer is dying. A 48-year-old with metastatic prostate cancer, he lives at home with his wife, a 10-year-old son, and a 14-year-old daughter. His condition has deteriorated significantly in the last month, and he and his family are aware that he probably has only weeks or days to live. Ms. Zimmer reports that for the past several weeks her husband has had no appetite and has been sleeping more during the day. She also says that for the past few days he has been moaning and seems to be in greater pain when she tries to move him. Mr. Zimmer is lethargic but rousable. When questioned, he says, "The pain is worse," rating it at 8 on a 0-to-10 scale, and describes the pain as aching, constant in his lower back, and worse with movement. Although he takes two tablets of hydrocodone with acetaminophen every four hours (each containing 5 mg of hydrocodone and 325 mg of acetaminophen), he says that "the medicines just don't seem to be working any more."

The interdisciplinary team, which includes the physician, the nurse, the social worker, the home health aide, and the family's chaplain, meets with the couple. Various approaches are tried to address the somatic and neuropathic components of his pain, including aggressive titration of pain medications, opioid rotation, the use of corticosteroids and other adjuvant drugs, and a change from the oral to a parenteral route of administration. But the pain continues to escalate. He is evaluated and found not to be a candidate for anesthetic procedures such as epidural infusion and nerve block. After lengthy discussion at a subsequent meeting, Mr. Zimmer asserts that, although he'd like to remain capable of interacting with his family, he would accept sedation if the pain cannot be controlled.

Mr. Zimmer need not die in agony. For most terminally ill patients, pain relief is possible.[1] Yet pain remains a primary concern of these patients and their families.[2,3] Despite decades of efforts to improve pain management, researchers continue to document inadequate assessment of pain and unrelieved pain in patients with a number of life-limiting diseases.[4-6] Terminal illness also affects family members, especially caregivers.[7,8] Witnessing a loved one's pain can cause severe emotional distress.[9]

Nurses can help to manage patients' pain through regular assessment, intervention planning, and the administration of pharmacologic and nonpharmacologic treatments. They can also improve pain out-

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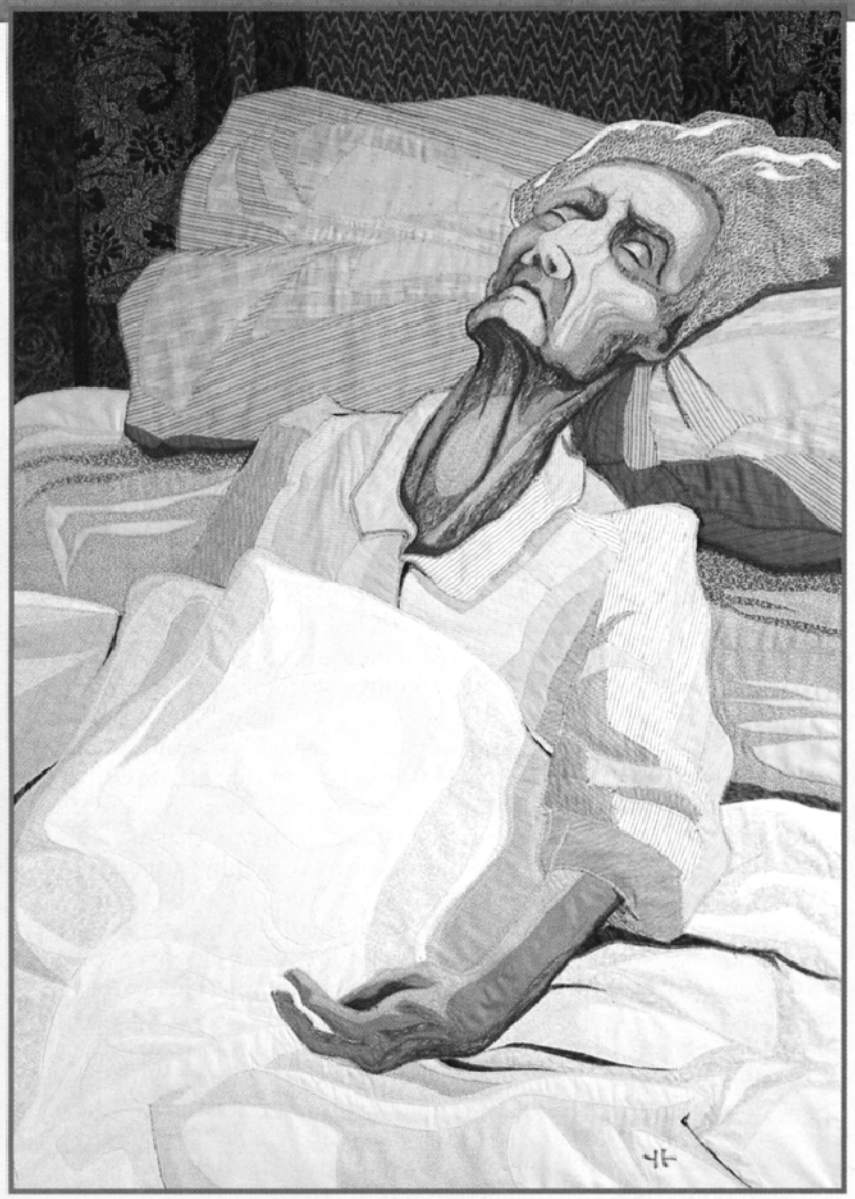


Extension, by Deidre Scherer, fabric and thread, 44″ × 30″, 1994; photo by Jeff Baird.

The artist says that this work is one of "a series of fabric and thread works that visualize the final year of a woman's life. She was 89 when we became friends. I had a sense of urgency about witnessing her experience."

comes by educating and counseling patients and families, monitoring for adverse effects of treatments, and participating in the development of institutional policies related to the treatment of pain.[10] This article offers a brief overview of some principles of the use of analgesics and focuses on three areas: difficulties in assessing pain in patients who are either nonverbal or cognitively impaired, the need to distinguish pain from other symptoms of distress among the dying, and the use of sedation for intractable pain and other symptoms.

DEFINITIONS AND PRINCIPLES

Pain is a complex phenomenon with physical, psychological, social, and spiritual components.[11, 12] One widely accepted definition states that "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[13] McCaffery and Pasero recently reaffirmed McCaffery's even broader 1968 definition: "Pain is whatever the experiencing person says it is, existing whenever he says it does."[14]

Suffering, often mentioned in tandem with pain, is a highly personal experience that depends on the meaning an event such as illness or loss has for an individual. Furthermore, it's impossible for one person to assume the presence or absence of suffering in another.[15, 16] One can suffer without physical pain, and physical pain doesn't necessarily involve suffering. But Dame Cicely Saunders, who trained as a nurse and social worker before becoming a physician and is considered the founder of the modern hospice movement, incorporated suffering in her concept of "total pain," which describes the various dimensions of pain.[17] Sources of suffering include fear of or actual physical distress, fear of dying, changing self-perceptions, relationship concerns, the need to find meaning in any given life experience, and past experiences of witnessing another person's distress.[15, 18] Suffering extends beyond physical symptoms to the effects of illness on one's psychological, social, and spiritual well-being.[19]

Although pharmacotherapy is the foundation of pain management, with opioids as the mainstay, attention to and intervention for the many aspects of pain and suffering are necessary to relieve pain.[2, 20]

Principles regarding the use of analgesics. Because the assessment of pain severity and its etiology guides the selection of analgesics and dosing, accuracy in this regard is imperative.[21] Comprehensive assessment of pain involves attention to various factors that influence how the patient experiences it.[12] Assessment includes a detailed history; pain characteristics and severity; a physical examination; psychological, social, spiritual, and cultural assessment with regard to pain; and appropriate diagnostic workup consistent with the goals of care.[1, 21]

The World Health Organization (WHO) developed a three-step "ladder" that outlines principles of analgesic selection and titration as well as those of the use of adjuvant drugs either as coanalgesics or to counteract adverse side effects.[22] Each step represents a level of pain severity by which analgesia selection is determined. Treatment begins according to whichever level of pain the patient is experiencing; therefore, the treatment of a patient in severe pain need not begin at the first step. The dose is titrated according to the patient's response, and monitoring should be regular and continuous. If the pain remains uncontrolled or increases, the patient "moves up" one step to the next level of pain severity and is treated accordingly. (See *WHO Analgesic Ladder,* page 31.)

The WHO ladder outlines pain management principles. The following guidelines for pain management in palliative care can help nurses understand how to put these principles into practice.[10]

- Perform a basic assessment of the patient's pain and evaluate its effects on the patient's quality of life. Titrate analgesics according to goals of care, pain severity, need for supplemental analgesics, severity of adverse side effects, measurements of functional abilities (such as interaction with others, mobility, and sleep), emotional state, and effects of pain on quality of life.
- Use sustained-release formulations and around-the-clock dosing for continuous pain.
- Treat breakthrough pain with immediate-release formulations.
- Monitor the patient's status frequently, especially during dose titration.
- Anticipate adverse effects and prevent or treat them as necessary.
- Be aware of possible drug–drug and drug–disease interactions.
- Reassess pain regularly. Determine what level of pain is acceptable to the patient. If pain is not relieved adequately, don't give up. Consult resources outside your institution, including nursing colleagues and experts in related disciplines.

WHEN PATIENTS ARE NONVERBAL OR COGNITIVELY IMPAIRED

The patient's verbal account is the accepted "gold standard" for pain measurement.[2, 13] Patients who aren't able to communicate verbally are at risk for underassessment and inadequate pain relief, those at highest risk being patients with cognitive impairment, intubated patients, infants, and patients older than 85.[23] However, behavioral cues also should be considered a form of self-report and must be regarded as such in patients who can't communicate verbally.

Nonverbal cues that may indicate pain include decreased activity or restlessness, furrowed brow, grimacing, crying, moaning, withdrawal from interaction with others, guarded or stiffened posture, and irritability.[13] Physiologic signs that may indicate pain, such as elevated blood pressure or rapid pulse, may be present as well. It's important to note that the absence of behavioral or physiologic cues does *not* mean that pain is absent.[1, 21]

It can be difficult for clinicians to recognize that a particular behavior indicates pain, especially if they're unfamiliar with how the patient usually behaves. Continuity of care can help. But because changes of caregivers can occur, it's essential that those responsible for direct patient care are specially trained to observe for cues that may be pain related.

If the patient has a disease process that would probably be painful to others, begin by suspecting the presence of pain. Patients who are nonverbal or cognitively impaired should receive pain treatment when undergoing procedures that have been found to be painful by others (such as dressing changes) or if conditions develop that have been reported as painful by others (such as pressure ulcers or fractures).[13, 21] When in doubt, the best course is to administer pain medication and evaluate the patient's response. Series editor and pain expert Betty Ferrell recently summed up this approach in a personal communication: "I often ask nurses to think about what's going on in the patient's body and to ask themselves if they would be in pain under similar circumstances. If you would hurt, your patient probably hurts, even if she can't tell you or doesn't act like she's in pain."

Fink and Gates offer recommendations regarding the assessment and treatment of pain in nonverbal patients.[21]

- Ascertain if the patient has a condition that might cause pain.
- Determine whether the patient has been treated for pain before, and if so, which treatment regimen was most effective.
- Attempt to obtain nonverbal feedback from the patient to signal the presence of pain (such as head nodding or eye movements).
- Ascertain the behaviors the patient usually

Equianalgesic Doses and Half-Lives of Selected Morphine-Like Agonists

Drug	Half life (hrs)	Oral dose	Parenteral dose (IV or SC)	Comments
Morphine	2–3	30 mg	10 mg	Standard of comparison for opioid analgesics. Morphine-6-glucuronide accumulation in patients with renal failure.
Hydromorphone	2–3	7.5 mg	1.5 mg	Useful alternative to morphine. No known active metabolite.
Methadone	15–190	20 mg acute, 2–4 mg chronic	10 mg acute, 2–4 mg chronic	May accumulate with repeated dosing.
Levorphanol	12–15	4 mg acute, 1 mg chronic	2 mg acute, 1 mg chronic	May accumulate with repeated dosing.
Fentanyl*	2	OTFC†	50–100 µg	Short half-life. Parenteral use by infusion. Clinical experience suggests morphine 2 mg/hr ≈ 100 µg transdermal patch.
Oxycodone	2–3	20–30 mg	not available	Available in liquid or tablet preparation. Usually combined with a nonopioid.
Hydrocodone	4	30 mg	not available	Usually combined with a nonopioid.

*Also available in transdermal and oral transmucosal forms, see package insert materials for dose recommendations. †OTFC = oral transmucosal fentanyl citrate.

Adapted from Coyle N, et al. Pharmacologic management of cancer pain. In: McGuire DB, et al., editors. *Cancer pain management.* 2nd ed. Boston: Jones and Bartlett Publishers; 1995. p. 89-130; Paice JA, Fine G. Pain at the end of life. In: Ferrell B, Coyle N, editors. *Textbook of palliative nursing.* Oxford (UK): Oxford University Press; 2001. p. 76-90.

exhibits when in pain. (This information may need to be obtained from family, friends, or other health care providers.)

- If there are signs of acute pain or reasons to suspect its presence, treat with analgesics, nonpharmacologic interventions, or both.
- Continue any pharmacologic and nonpharmacologic interventions that appear to result in pain relief.
- If a behavioral cue persists or intensifies, rule out other causes (such as delirium, adverse effects of treatment, or accumulation of drug metabolites) and focus treatment on the known or suspected cause.
- Assess family members' and primary caregivers' interpretations of the patient's behavior. If they believe the patient is still in pain, ask why.

DIFFERENTIATING PAIN FROM OTHER SYMPTOMS

Pain may be only one component of suffering.[19] As death approaches, pain and other symptoms develop as the result of disease progression and multisystem organ failure.[2, 24]

For example, it's not uncommon for terminally ill patients to develop delirium at the end of life. Suppose a patient exhibits increased agitation and restlessness through behavioral cues such as moaning and grimacing. Possible causes of such behaviors include delirium as well as pain.[25, 26]

The following points can help nurses to discern and treat pain when other symptoms such as delirium are also present.

- When increased pain is suspected, upward titration of pain medication is warranted.
- Assess the effectiveness of pain relief during the time interval of peak effect appropriate to the particular analgesic. Administer the same dose or titrate upward if the patient doesn't appear to respond. Evaluate whether a change in the drug or route of administration is needed (see *Equianalgesic Doses and Half-Lives of Selected Morphine-Like Agonists*, above).
- Reassess the patient for pain and other symptoms at frequent, regular intervals (every one to two hours for symptoms that appear to be severe, for example).
- If the patient responds well and other symptoms such as agitation or restlessness abate, pain was the likely cause.
- If other symptoms worsen despite upward titration, consider other possible causes, such as delirium. Reevaluate the plan of care and consult colleagues. Both pain and delirium may have increased, necessitating pharmacotherapy for both.

In short, consider all the available cues, verbal and nonverbal, and ask yourself, "What am I missing?" Continuous reassessment is vital.

Multisystem failure and its impact on pain management. The progression toward death is marked by a decrease in blood perfusion that results in the shutdown of major organ systems. Cardiac output and intravascular volume decrease, resulting in tachycardia and hypotension. Neurologic function diminishes as a consequence of multiple, concurrent, and irreversible organ failure. Drugs and their metabolites may accumulate, causing increased confusion or sedation. Other effects of multisystem organ failure can include decreased cerebral perfusion, hypoxemia, metabolic imbalances, acidosis, sepsis, or a combination of these.

Patients with major organ dysfunction who are in pain should be treated with an opioid with a short half-life, such as hydromorphone, oxycodone, or fentanyl.[2] Both transmucosal and parenteral fentanyl have rapid onsets of action, but with transdermal fentanyl, there is a lag in absorption time (12 to 16 hours to reach peak effect and 48 hours to reach steady-state blood concentrations), making the latter form inappropriate when rapid titration is indicated.[2]

Renal dysfunction allows opioid metabolites, particularly those of morphine, to accumulate.[10] The accumulation of morphine metabolites (morphine-3-glucuronide and morphine-6-glucuronide) may lead to opioid toxicity, as indicated by hallucinations, myoclonus, and hyperirritability.[2, 10] However, renal impairment is not an absolute contraindication to morphine, particularly if the patient is already on a morphine regimen and it's providing pain relief without adverse effects or serious toxicities.[2]

There is significant variation in response to opioids among individuals. Opioid rotation is indicated when one proves to be ineffective or if adverse effects appear not to be controllable by standard treatments.[27] (Even if there are no known metabolites, rotation may be necessary because of side effects.) Although one or two rotations are usually sufficient, three, four, or even five or more opioids may be tried, until an effective one—one that produces the most favorable balance between pain relief and side effects—is found.[28-30] Although some patients require a parenteral route of delivery, most patients at the end of life can be managed with the oral route.

USE OF SEDATION

In some patients, pain becomes intractable despite aggressive titration of standard medications.[2] Sedation, the use of high doses of sedatives, is employed as a temporary measure to relieve severe physical distress in trauma, burn, postsurgical, and intensive care patients.[31] Sedation at the end of life is used to relieve intractable pain and other symptoms when death appears imminent and when all other means of relieving the patient's suffering have failed. The goal of sedation in such cases is comfort. Unconsciousness is an unintentional but expected side effect of sedation. It's the means to an end, not a goal in itself.

The goal of symptom control thus changes as well, from controlling symptoms through treatments that maintain the patient's ability to stay awake to controlling them through sedation and accepting the patient's resulting loss of consciousness. Decisions to continue or discontinue other treatments, such as antibiotics and hydration, are made separately.

In a personal communication, series editor and pain expert Nessa Coyle expanded on Quill and Byock's recommendations concerning the decision to sedate a patient with advanced disease who is experiencing refractory symptoms.[31]

Consider sedating a patient when

- a discussion has been held with the patient (whenever possible), the patient's family, the health care proxy, and the health care team to clarify the patient's wishes.
- attempts to treat intractable symptoms have failed. Make sure pharmacologic, psychological, and physical interventions used to date and current treatment of intractable symptoms have been reviewed and previous and current interventions and outcomes have been documented in the patient's chart.
- the primary goal of care is no longer the prolongation of life but the provision of comfort. This and other past and current goals of care must be clearly documented in the patient's chart.
- the patient has do-not-resuscitate (DNR) status.

Other guidelines:

- Sedation can be reduced at any time if the family wishes, after discussion with the physician. However, sedation may have to be rapidly resumed if the patient's distress escalates.
- Interdisciplinary support must be made available to ease the distress of the patient and family members.

Institutional guidelines for the use of sedation in dying patients must include parameters for drug selection, dosing, and titration based on each patient's symptoms.[2] Dose escalation, or upward titration of the dose, should not occur without clear indications and documentation. The depth of sedation necessary to achieve symptom relief varies greatly, and ongoing monitoring and titration should be consistent with the goals of care.[10] Clear and ongoing communication between the patient or proxy and the team members, with full documentation, is essential. Sedation should be discussed with regard to the goals of care, the patient's resuscitation status, the informed consent of the patient or

proxy, the symptoms being treated, and the management approach selected. Also needed are ongoing monitoring of the effectiveness of the approach in achieving comfort (for example, one desired end point is that there be no evidence, verbal or nonverbal, of distress or discomfort) and attention to the patient's basic care (such as bathing and mouth care), as well as attention to the needs of the family and additional meetings with them, held as often as is necessary, to review the plan of care.[2]

The literature describing the use of sedation in these patients is largely anecdotal. Approaches include the use of opioids, neuroleptics, benzodiazepines, and barbiturates.[10] Sedation may be achieved by aggressively increasing the dosage of an opioid already in use in combination with a benzodiazepine, anxiolytic, sedative, or hypnotic.[10] Often the drugs used are selected according to the intractable symptom being treated, such as pain, delirium, or severe dyspnea. Regardless, opioids should not be discontinued in a patient already receiving them for pain or shortness of breath, since withdrawal symptoms and recurrence of pain may ensue.

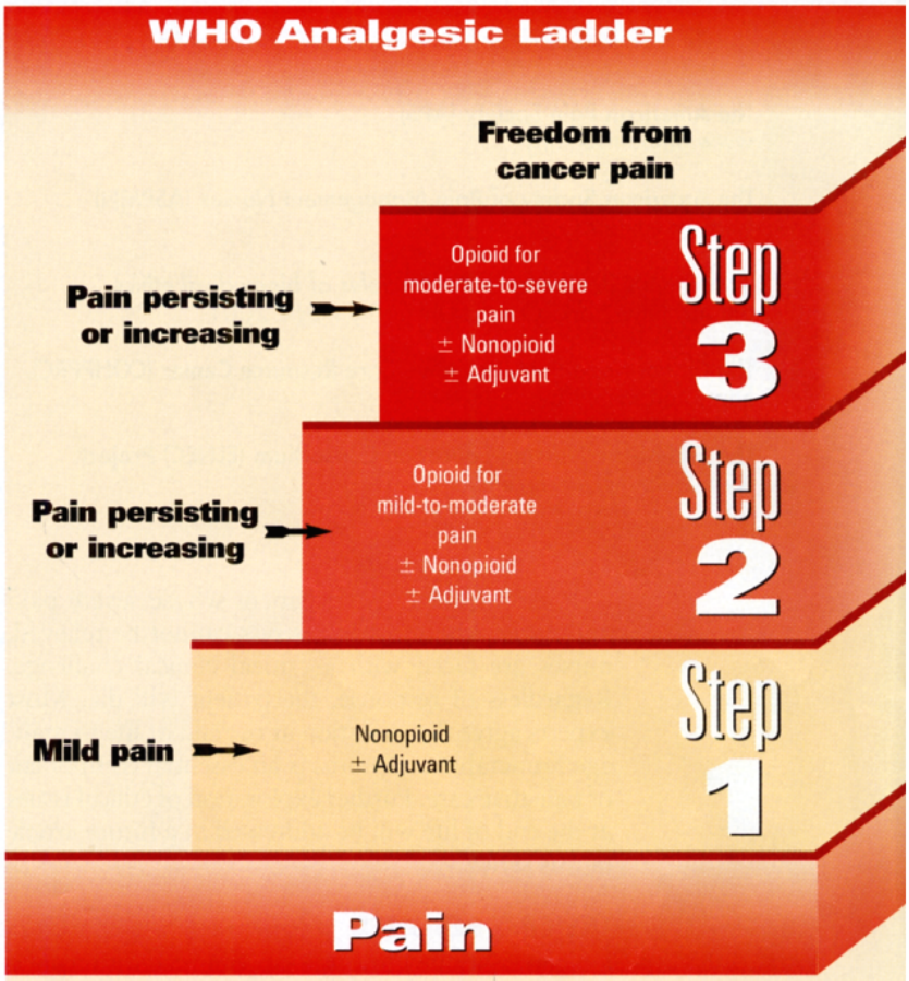
Agents such as midazolam (a benzodiazepine) or ketamine (an anesthetic) have also been effective.[10,32] Sedation using these agents may be instituted when opioid rotation and appropriate dose increases result in dose-limiting side effects or when pain is still not relieved.[32] The use of ketamine as an anesthetic and analgesic has been limited because of dose-dependent adverse effects, particularly nightmares and other psychotomimetic effects. However, single-dose IV ketamine is short acting, and clinical experience has revealed that very small doses may result in potent analgesic effect with few, if any, psychotomimetic effects.[32] At present, the benefits of ketamine are still considered anecdotal because of the lack of blinded and controlled trials. Ketamine should be considered only as a possible third-line treatment when opioid rotation and upward titration of opioids fail to adequately control increasing pain at the end of life.[32]

The nurse should anticipate the family's distress. Some family members may wonder whether sedation should continue or ask that the sedation level be reduced so that they can interact with the patient again. Staff members may have concerns, particularly those who have no previous experience with end-of-life sedation; these will need to be addressed as well. Staff conferences should be held frequently to review the plan of care.

ETHICAL ISSUES

The fear that the use of analgesic or sedative medications will hasten death is prevalent among both health professionals and the public; controversies persist regarding whether sedation at the end of life is distinguishable from assisted suicide or "slow euthanasia."[33] In a 1991 position paper, the ANA stated that "nurses should not hesitate to use full and effective doses of pain medication for the proper management of pain in the dying patient. The increasing titration of pain medication to achieve adequate symptom control, even at the expense of life . . . is ethically justified."[34] And in its 1997 ruling on two related cases, *Washington v. Glucksberg* and *Vacco v. Quill*, the U.S. Supreme Court pointedly differentiated palliation from assisted suicide, noting that the use of sedation for symptom relief in people who are near death is appropriate.[35-37] The *intent* of relieving pain despite the relatively small risk of hastening death is ethically acceptable.

Interestingly, nothing in the literature supports the contention that patients who are near death and are sedated to control intractable symptoms die more quickly than patients who are not sedated. In fact, the opposite may be true: unrelieved pain may hasten death by causing increased physiologic stress, diminished immunocompetency, decreased mobility, an increased risk of thromboembolism and pneumonia, increased difficulty breathing, and greater myocardial oxygen requirements.[10]



Adapted from: World Health Organization. *Cancer pain relief and palliative care*. Geneva: WHO; 1996. Used with permission.

RESOURCES

The American Pain Society (APS)
www.ampainsoc.org

The American Society of Pain Management Nurses (ASPMN)
www.aspmn.org

Beauchamp TL, Childress JF. *Principles of biomedical ethics.*
5th ed. New York: Oxford University Press; 2001.

The City of Hope Pain/Palliative Care Resource Center (COHPPRC)
http://prc.coh.org

The End-of-Life Nursing Education Consortium (ELNEC) Project
www.aacn.nche.edu/elnec

In caring for a dying patient whose severe pain and other symptoms of distress cannot be relieved, nurses are faced with a critical clinical challenge. Regardless of response, the patient will die. Most experts agree that sedation at the end of life to manage intractable symptoms is an essential component of palliative care. Further exploration of ethical issues at the end of life will be addressed in a future article in this series.

THE CASE REVISITED

Despite continued titration of pain medications and use of nonpharmacologic pain relief measures, Mr. Zimmer's pain continues to escalate, and he's increasingly restless and agitated. Although he has become unable to communicate verbally, he moans, grimaces, and stiffens his body when turned. Discussions reveal that the family's primary goal of care is to keep him as comfortable as possible, and this is consistent with his last stated wishes. After reassessment, treatment of treatable symptoms (such as delirium) begins in accordance with the goals of care.

A subcutaneous infusion of morphine is started and titrated upward. Mr. Zimmer becomes even more restless. Blood work reveals impaired renal status, and his providers suspect that accumulation of morphine metabolites is contributing to his agitation and restlessness. Despite a switch to hydromorphone and rapid upward titration, Mr. Zimmer continues to exhibit significant distress. Haloperidol is initiated to treat his delirium, but the symptoms remain unrelieved. All of these treatments are well documented.

The interdisciplinary team meets with the family at their home. Mr. Zimmer is rousable but unable to answer questions. He and his family are aware that he's dying. After reviewing all previous and current treatments, it's determined that his pain and other symptoms remain unrelieved and are causing severe suffering. Ms. Zimmer agrees that it is time to try sedation. She and her husband had discussed this possibility earlier, and she says that she's comfortable with the decision. Mr. Zimmer has a DNR order.

Administration of sedative medication begins, and after upward titration, Mr. Zimmer appears to be sleeping comfortably. He's no longer agitated and no longer moans or grimaces when turned. Ms. Zimmer is instructed in mouth and skin care to ensure her husband's comfort. Discussions regarding the plan of care continue on an ongoing basis with Ms. Zimmer and at weekly team meetings. Members of the interdisciplinary team are readily available to the patient and family. The children are included in the conversations, and they take turns in helping to care for their father.

After a week, it becomes apparent that Mr. Zimmer has only days or hours to live. Ms. Zimmer asks that the sedation be reversed so that she and her husband and the children can say good-bye. After this is done, Mr. Zimmer again becomes restless and agitated. Sedation is resumed at the previous level, and his symptoms abate. Mr. Zimmer dies three days later with his family at his side. ▼

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CE 2 HOURS
Continuing Education

GENERAL PURPOSE: To present registered professional nurses with guidelines for pain assessment and appropriate interventions for nonverbal or cognitively impaired patients at the end of life.

LEARNING OBJECTIVES: After reading this article and taking the test on the next page, you will be able to:

- Discuss three focus areas in the assessment of pain in patients at the end of life.
- Discuss the actions and side effects of pharmacologic agents used to relieve pain in these patients.
- List interventions for relieving pain and suffering in patients at the end of life.

To earn continuing education (CE) credit, follow these instructions:

1. After reading this article, darken the appropriate boxes (numbers 1–17) on the answer card between pages 48 and 49 (or a photocopy). Each question has only one correct answer.

2. Complete the registration information (Box A) and help us evaluate this offering (Box C).*

3. Send the card with your registration fee to: Continuing Education Department, Lippincott Williams & Wilkins, 345 Hudson Street, New York, NY 10014.

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CE 2 HOURS
Continuing Education
TEST

Difficulties in Managing Pain at the End of Life

1. Patients who are experiencing pain
a. will show an increase in blood pressure as pain intensifies.
b. may not demonstrate outward signs of pain.
c. will show an increase in the pulse rate as pain intensifies.
d. typically report pain verbally.

2. A cognitively impaired patient
a. is unlikely to feel pain as intensely as a patient without cognitive impairment.
b. will always use nonverbal gestures to convey pain.
c. has an exaggerated perception of pain.
d. should be given pain medication for any experience that is typically painful.

3. According to Ferrell, pain
a. is the primary reason for suffering.
b. is only a minor consideration when extreme emotional factors are causing suffering.
c. is only one of many factors that contribute to suffering.
d. virtually defines suffering in patients who are terminally ill.

4. Which of the following is considered the mainstay of pharmacologic therapy for patients at the end of life?
a. nonsteroidal antiinflammatory drugs
b. tricyclic antidepressants
c. corticosteroids
d. opioids

5. When death is imminent, the patient should be reevaluated for pain and other symptoms
a. at the appropriate interval for the peak effect of the analgesia.
b. at frequent, regular intervals.
c. every 1 to 2 hours.
d. every 2 to 4 hours.

6. Common findings with multisystem failure include all of the following except
a. tachycardia.
b. acidosis.
c. hypoxemia.
d. hypertension.

7. Of the following, the drug of choice for pain relief in a patient with major organ dysfunction is
a. oxycodone.
b. levorphanol.
c. methadone.
d. haloperidol.

8. An especially poor analgesic choice when rapid titration is indicated is
a. morphine.
b. hydromorphone.
c. transdermal fentanyl.
d. parenteral methadone.

9. For patients with renal dysfunction at the end of life, morphine
a. is contraindicated.
b. is unlikely to provide good pain relief.
c. can cause hyperirritability.
d. produces metabolites that are readily excreted.

10. Sedation at the end of life
a. should be initiated even before pain management is begun.
b. eliminates the need for antibiotic therapy.
c. replaces analgesic therapy.
d. is intended to provide comfort.

11. Sedation should be
a. avoided at all costs.
b. given to all patients at the end of life.
c. the ultimate goal of pain control.
d. given only to patients whose pain is truly intractable.

12. When sedation is an added goal of the pharmacologic regimen for the patient at the end of life,
a. analgesia can be discontinued without precipitating withdrawal symptoms.
b. pain can recur if analgesia is discontinued.
c. hydration is unnecessary.
d. informed consent is unnecessary.

13. When the opioid dosage is increased to achieve sedation,
a. the intervention is considered assisted suicide.
b. the patient's death is hastened.
c. the intervention is considered "slow euthanasia."
d. the intervention is an ethically acceptable approach to relieving intractable pain in patients at the end of life.

14. Which of the following is recommended for pain management in palliative care situations?
a. using around-the-clock dosing for continuous pain syndromes
b. using mixed agonist–antagonist opioids
c. using PRN dosing for continuous pain syndromes
d. using sustained-release formulations for breakthrough pain

15. The equianalgesic parenteral dose of morphine 30 mg PO is
a. 1.5 mg.
b. 10 mg.
c. 20 mg.
d. 30 mg.

16. Which of the following statements regarding ketamine is true?
a. Around-the-clock dosing of ketamine results in potent analgesia with few, if any, psychotomimetic effects.
b. Because the drug is short acting, very small doses of single-dose IV ketamine will not result in effective analgesia, although this will produce few, if any, psychotomimetic effects.
c. Because the drug is short acting, very small doses of single-dose IV ketamine may result in effective analgesia with few, if any, psychotomimetic effects.
d. Because the drug is short acting, very small doses of single-dose IV ketamine should be used as a first-line treatment for pain.

17. A review of the literature on the use of sedation for dying patients
a. reveals findings that are largely anecdotal.
b. indicates that sedation is substantially overused.
c. is conclusive regarding the efficacy of sedation in these patients.
d. demonstrates multidisciplinary collaboration in the development of guidelines for its use. ▼