Caring for Dying Patients in the Intensive Care Unit

Managing Pain, Dyspnea, Anxiety, Delirium, and Death Rattle

Margaret L. Campbell, RN, PhD

ABSTRACT

Critically ill patients receiving palliative care at the end of life are at high risk for experiencing pain, dyspnea, and death rattle. Nearly all these patients are at risk for the development of delirium. Patients who are alert may experience anxiety. Advanced practice nurses and staff nurses are integral to detecting and treating these symptoms. Pain, dyspnea, and anxiety should be routinely assessed by patient self-report when possible. Routine behavioral screening for delirium is recommended. Behavioral observation tools to detect pain and dyspnea and proxy assessments guide symptom identification when the patient cannot provide a self-report. Evidence-based interventions are offered for both prevention and treatment of pain, dyspnea, anxiety, and delirium. Death rattle does not produce patient distress, and current pharmacological treatment lacks an evidence base. Pain management has a robust evidence base compared to management of dyspnea, anxiety, and delirium among this population; well-designed, adequately powered studies are needed.

Key words: anxiety, critical care, death rattle, delirium, dyspnea, pain

Advanced practice nurses and staff nurses are integral to symptom management in the intensive care unit (ICU). When patients are dying, the emphasis of their care is on symptom assessment and treatment. Palliative care in the ICU is not limited to patients who are dying; all ICU patients warrant attention for distressing symptoms. However, the purpose and scope of this article are to provide a review of symptom prevalence, prevention, assessment, and treatment for 5 common symptoms experienced by critically ill patients who are dying: pain, dyspnea, anxiety, delirium, and death rattle.

Pain

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. Patients in the ICU are subjected to several painful interventions and procedures in addition to experiencing pain from underlying causes associated with their illness or injuries. Most conscious patients in the ICU experience pain.

Prevalence

Nelson et al produced the earliest evidence about the symptom experiences of critically ill patients with cancer receiving intensive care. The Edmonton Symptom Assessment Scale (ESAS) was used to measure symptoms experienced by 50 patients able to use the scale. More

Margaret L. Campbell is Professor, College of Nursing, Wayne State University, 5557 Cass Ave, Detroit, MI 48202 (m.campbell@wayne.edu).

The author declares no conflicts of interest.

DOI: 10.1097/NCI.000000000000077

Copyright © 2015 American Association of Critical-Care Nurses. Unauthorized reproduction of this article is prohibited.
than half the critically ill patients with cancer who could respond to the ESAS reported moderate or severe pain. In another large prospective study of critically ill patients at risk of dying, 40% reported pain. In a landmark study of ICU procedural pain, Puntillo et al identified the pain associated with turning, tracheal suctioning, wound drain removal, central catheter insertion, and femoral sheath removal. Clearly, significant numbers of ICU patients who are able to communicate report pain; however, the pain experience of patients who are unable to report because of sedation or cognitive impairment is less well understood.

Prevention
When the goals of ICU care have an emphasis on symptom palliation, several iatrogenic sources of pain can be minimized or eliminated. Painful procedures, as identified previously, should be avoided whenever possible. For instance, turning as a routine, the most uncomfortable procedure, may need to be modified in a dying patient to turning whenever the patient’s comfort will be enhanced. Central catheters can be removed unless the central catheter is the only intravenous access for medication administration. Arterial and pulmonary artery catheters have no role when the goal of treatment is palliation (comfort) and should be removed. Foley catheters, particularly in men, can be replaced with a condom drainage system. Dressing changes need to be done only when dressings are soiled, saturated, or odorous rather than on a routine schedule. Novice staff nurses need mentoring from experienced staff nurses and advanced practice nurses who can help them determine when routine interventions can be altered or eliminated. Premedication with an opioid analgesic is essential before performing procedures that are known to be painful, such as chest tube removal or tracheal suctioning.

Assessment
The simplest assessment for pain is the query, “are you having any pain?” This query can be followed by having the patient, if he or she is able, rate the intensity of their pain using a numeric rating scale anchored at 0 for no pain and 10 for the most severe pain. The McGill Pain Questionnaire, the Memorial Symptom Assessment Scale, and the ESAS (Table 1) use numeric rating of multiple symptoms and are suitable for use in the ICU with patients who are able to use them. Some patients may be able to point to a line or a figure on a visual analog scale. Similarly, pointing to a body diagram allows the patient to pinpoint the location of pain. However, these tools may be too complex for patients who are dying.

The Behavior Pain Scale and the Critical Care Pain Observation Tool (Table 2) are recommended for use with adult ICU patients, excluding those with brain injury. The Faces, Legs, Activity, Cry, and Consolability scale has been widely used with young children and is not valid with adult patients. Observation scales have utility when patients cannot give a pain self-report because of cognitive impairment or decreased consciousness.

Assumptions about pain can be made when certain characteristic behaviors are displayed; these behaviors include grimacing, localizing, or withdrawing, or the patient making an “ouch” face. In addition, assumptions can be made when an intervention is known to be painful, such as chest tube removal.

Treatment
Opioids remain the primary medications to treat pain in critically ill patients. Morphine and fentanyl are the most commonly used. Likewise, medications in this class are the mainstay of pain management among terminally ill and dying patients. An initial dose of morphine (5 mg) or fentanyl (0.05 mg) is suggested when the patient is naive to this class of analgesic agents. A low dose and slow titration to the patient’s report or display of comfort is indicated. Increasing bolus doses by 50% to 100% and continuously monitoring for therapeutic effect will achieve a patient-specific dose. Opioids have no toxic ceiling, and doses will vary across patients with some conditions, such as metastatic abdominal cancers, requiring seemingly high doses. Intravenous boluses are recommended when the patient’s pain is episodic, and continuous infusions are recommended when the pain is frequent or constant.

Constipation is a common adverse effect of opioids and never abates with an ongoing opioid regimen; thus, a stimulant (senna) or osmotic laxative (lactulose) must be prescribed when an opioid is initiated unless contraindicated. Dying patients in the ICU may have difficulty when they are unable to take oral laxatives and when no enteral tube is used. Providers must balance the risk of constipation...
Table 1: Symptom Assessment Tools Suitable for Patients Who Are Critically Ill or Dying

<table>
<thead>
<tr>
<th>Tool</th>
<th>Indication</th>
<th>Scoring</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeric Rating Scale</td>
<td>Pain, Dyspnea, Anxiety</td>
<td>0 = no symptom. 10 = worst symptom.</td>
<td>Patient is asked to report a number for current symptom.</td>
</tr>
<tr>
<td>McGill Pain Questionnaire</td>
<td>Pain</td>
<td>Patients choose from several descriptors; points assigned to each descriptor are summed. Scores range from 0 to 78, with higher scores signifying more severe pain.</td>
<td>Patients assign a number to variables in 3 categories: (1) what does pain feel like; (2) how does it change over time; and (3) how strong is the pain.</td>
</tr>
<tr>
<td>Memorial Symptom Assessment Scale</td>
<td>Pain, Anxiety, Others</td>
<td>Patient assigns a number ranging from 1 to 4 for each of 32 symptoms' frequency, severity, and distress experienced in the last 7 days.</td>
<td>Complex scoring into various subscales: psychiatric, physical, and global distress.</td>
</tr>
<tr>
<td>Edmonton Symptom Assessment System</td>
<td>Pain, Dyspnea, Anxiety, Others</td>
<td>Patient assigns a number ranging from 0 to 10 for 9 symptoms currently experienced.</td>
<td>Provides a clinical profile of the symptom over time.</td>
</tr>
<tr>
<td>Behavior Pain Scale</td>
<td>Pain</td>
<td>Three variables: facial expression, upper limb movements, and compliance with mechanical ventilation. Variables are scored from 1 to 4 and points are summed.</td>
<td>Patient is observed. Nurse generates score. Scores range from 3 (no pain) to 12 (maximum pain).</td>
</tr>
<tr>
<td>Critical-Care Pain Observation Tool</td>
<td>Pain</td>
<td>Four variables: facial expression, body movements, muscle tension, and compliance with mechanical ventilation or vocalization (extubated). Variables are assigned 0-2 points and points are summed.</td>
<td>Patient is observed. Nurse generates score. Scores range from 0 = no pain to ≥2 = pain.</td>
</tr>
<tr>
<td>Respiratory Distress Observation Scale</td>
<td>Dyspnea</td>
<td>Eight variables: heart rate, respiratory rate, accessory muscle use, paradoxical breathing pattern, nasal flaring, restlessness, grunting at end-expiration, and fearful facial display. Variables are scored from 0 to 2 points and points are summed.</td>
<td>Patient is observed. Nurse generates score. Scores ≥3 = respiratory distress.</td>
</tr>
<tr>
<td>Faces Anxiety Scale</td>
<td>Anxiety</td>
<td>Five caricature faces graded from no anxiety to severe anxiety.</td>
<td>Patient points to a picture signifying current anxiety.</td>
</tr>
<tr>
<td>Confusion Assessment Method – ICU</td>
<td>Delirium</td>
<td>Three tests completed sequentially if acute change in mental status: attention screening with either letter recognition or pictures, current Richmond Agitation-Sedation Scale level, and disorganized thinking.</td>
<td>Patient is tested. Nurse determines whether delirium is present or absent.</td>
</tr>
<tr>
<td>Intensive Care Delirium Screening Checklist</td>
<td>Delirium</td>
<td>Eight variables: altered level of consciousness, inattention, disorientation, hallucination, agitation, inappropriate speech or mood, sleep-wake cycle disturbance, and symptom fluctuation. Variables are scored 0 to 2 and points are summed.</td>
<td>Nurse observes behavior over entire shift. 0 = normal. 1–3 = subsyndromal delirium. 4–8 = delirium.</td>
</tr>
</tbody>
</table>

Copyright © 2015 American Association of Critical-Care Nurses. Unauthorized reproduction of this article is prohibited.
with the burden of administering a laxative on the basis of the expected duration of patient survival. When death is expected within hours to 1 day, laxatives are not indicated.

Other nonopioid formulations, such as anti-inflammatory medications (ketorolac), intravenous acetaminophen when enteral administration is not possible, and anticonvulsants (eg, gabapentin, carbamazepine) to treat neuropathic pain, may be useful as adjuncts to opioids. Music has a modest evidence base as a complementary adjunct to analgesic agents, although studies of critically ill patients and music therapy are lacking.18

**Dyspnea**

Dyspnea is a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity.19 Dyspnea is akin to suffocation and is one of the worst symptoms experienced by critically ill patients, including those who are being treated with mechanical ventilation.4

**Prevalence**

Moderate or severe levels of dyspnea were reported by 33% of respondents in Nelson et al’s study, some of whom were being treated with mechanical ventilation. A larger proportion of patients (76%) were reported to experience dyspnea from a retrospective chart review of critically ill patients.20 Punttillo et al conducted a prospective observational study of critically ill patients’ symptom prevalence, intensity, and distress among patients at high risk of dying, representing one of the first studies to measure multiple dimensions of the symptoms. A modified ESAS was used to measure the presence, intensity, and distress of 10 symptoms, including dyspnea. As with previous investigations, many patients were unable to provide a dyspnea self-report, although these investigators

<table>
<thead>
<tr>
<th>Table 2: Critical-Care Pain Observation Tool*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indicator</strong></td>
</tr>
<tr>
<td>Facial expression</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Body movements</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Muscle tension evaluation by passive flexion</td>
</tr>
<tr>
<td>and extension of upper extremities</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Compliance with the ventilator (intubated</td>
</tr>
<tr>
<td>patients)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>OR</td>
</tr>
<tr>
<td>Vocalization (extubated patients)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Total, range</td>
</tr>
</tbody>
</table>

* Republished with permission of American Association of Critical-Care Nurses from Gelinas et al.10

Copyright © 2015 American Association of Critical-Care Nurses. Unauthorized reproduction of this article is prohibited.
found that 70% of patients could respond some of the time. In addition, although some patients could identify the presence of 1 or more symptoms, fewer could quantify the symptom intensity and distress. Of respondents, 44% reported dyspnea of moderate intensity, producing moderate to severe distress. Of symptoms assessed, dyspnea was the most distressing. 2

Patients being treated with mechanical ventilation are expected to have less dyspnea than those who are not, because mechanical ventilation is the most reliable means of treating dyspnea associated with respiratory failure. However, half of the intubated or tracheotomized patients in a prospective observation study reported dyspnea while receiving mechanical ventilation. 23 Dyspnea can be expected during weaning trials and certainly during terminal ventilator withdrawal. The prevalence of respiratory distress among critically ill patients at risk of dying to 70%. 3, 4, 20 Critically ill patients near death of critically ill patients has ranged from 40% to 70%. 11 The Respiratory Distress Observation Scale (RDOS; Table 3) is the only valid and reliable tool for measuring respiratory distress when the patient cannot provide a dyspnea self-report, such as those who are critically ill and/or those near death. 21 The RDOS has potential application for clinical assessment of patients in the ICU undergoing treatment of respiratory distress, mechanical ventilation, weaning trials, and in particular terminal ventilator withdrawal to allow a natural death.

Proxy assessments from clinicians or families are controversial because of equivocal findings when comparisons are made with self-reports from patients; in some cases, clinicians or families overestimate patients’ symptoms and in others the symptoms are underestimated. 23, 26 Clinicians can assume that dyspnea is present in situations where dyspnea is likely to occur, such as during tracheal suctioning or during terminal ventilator withdrawal.

Assessment
Although more than 40 tools exist to assess dyspnea, no instrument is ideal for palliative care. 21 To provide a dyspnea self-report, the patient must be conscious and able to interpret sensory stimuli, pay attention to clinician instructions, concentrate to form a dyspnea self-report, be able to communicate in some fashion, and be able to recall the previous report if serial assessments are done. 24 The ability to self-report dyspnea among samples of critically ill patients has ranged from 40% to 70%. 11, 14, 20 Critically ill patients near death often are sedated, cognitively impaired, or unconscious and thus limited in their abilities to use a complex instrument. The numeric rating scale, for those able to report, is an appropriate palliative care tool, although limited to only identification of dyspnea presence and intensity. 22 A dyspnea visual analog scale permits a unidimensional assessment of dyspnea intensity if the patient can point to a line.

The Respiratory Distress Observation Scale (RDOS; Table 3) is the only valid and reliable tool for measuring respiratory distress when the patient cannot provide a dyspnea self-report, such as those who are critically ill and/or those near death. 21 The RDOS has potential application for clinical assessment of patients in the ICU undergoing treatment of respiratory distress, mechanical ventilation, weaning trials, and in particular terminal ventilator withdrawal to allow a natural death.

Treatment
Dyspnea is refractory when it persists after the underlying etiological condition has been optimized. 24 Treatment of refractory dyspnea may include positioning, oxygen, opioids, benzodiazepines, and mechanical ventilation.

Positioning to optimize vital capacity and ventilation may be accomplished by using the patient as his or her own control and assessing dyspnea or respiratory distress to identify an optimal position. In obstructive lung disease, an upright, arms-supported (tripod) position is often helpful. 27, 28 Oxygen may reduce dyspnea in patients with hypoxemia; however, no benefit has been found when the patient had mild or no hypoxemia. 29, 30 Oxygen can be withheld or withdrawn from patients who are actively dying and showing no signs of respiratory distress. 31 Determining whether oxygen can be withdrawn entails standing by and monitoring for reports from the patient or signs of respiratory distress (as identified by the use of the RDOS) as the oxygen is decreased; if no distress is reported after 5 to 10 minutes, the supplemental oxygen can be discontinued. A decreasing peripheral oxygen saturation and other vital sign changes, such as tachycardia, are expected during the dying process and by themselves are not indicators of patient distress. 31 Opioids are the mainstay medications for treating refractory dyspnea, but the evidence is limited to oral or parenteral morphine and fentanyl. 32, 33 Nebulized opioids have not been rigorously studied. An effective dose regimen for dyspnea has not been empirically established, but my anecdotal experience suggests that the initial dose is lower than what is typically recommended for a pain regimen. Thus, an initial dose of morphine in a naive patient to treat dyspnea is 2 mg intravenously or 6 mg enterally. Titrating to the patient’s responses as indicated with a low/slow regimen is recommended as previously described. 15 Benzodiazepines...
VOLUME 26 • NUMBER 2 • APRIL–JUNE 2015

SYMPTOM MANAGEMENT AT THE END OF LIFE

Mechanical ventilation, invasive or noninvasive, is an effective means of treating dyspnea associated with respiratory failure. However, dying patients generally want to forgo mechanical ventilation. One study of noninvasive ventilation (NIV) use as a palliative strategy in patients with dyspnea associated with advanced cancer was undertaken; patients with hypercarbia had effective relief of dyspnea from NIV compared with oxygen. However, patients have difficulty tolerating NIV because of mask pressure and gastric insufflation. Use of NIV for symptom palliation was addressed by a Society of Critical Care Medicine task force. As stated by the task force, the appropriate endpoint for NIV for palliation at the end of life is symptom relief. Failure to improve dyspnea or worsening of distress warrants NIV discontinuation.

### Ventilator Withdrawal

Ventilator withdrawal is a palliative care process that entails the cessation of mechanical

<table>
<thead>
<tr>
<th>Variable</th>
<th>0 Points</th>
<th>1 Point</th>
<th>2 Points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart rate per minute</td>
<td>&lt;90 beats</td>
<td>90-109 beats</td>
<td>≥110 beats</td>
<td></td>
</tr>
<tr>
<td>Respiratory rate per minute</td>
<td>≤18 breaths</td>
<td>19-30 breaths</td>
<td>&gt;30 breaths</td>
<td></td>
</tr>
<tr>
<td>Restlessness: nonpurposeful</td>
<td>None</td>
<td>Occasional, slight movements</td>
<td>Frequent movements</td>
<td></td>
</tr>
<tr>
<td>movements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paradoxical breathing pattern:</td>
<td>None</td>
<td>Present</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>abdomen moves in on inspiration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessory muscle use: rise in</td>
<td>None</td>
<td>Slight rise</td>
<td>Pronounced rise</td>
<td></td>
</tr>
<tr>
<td>clavicle during inspiration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grunting at end expiration:</td>
<td>None</td>
<td>Present</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td>guttural sound</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasal flaring: involuntary</td>
<td>None</td>
<td>Present</td>
<td>Eyes wide open, facial muscles tense, brow furrowed, mouth open, teeth together</td>
<td></td>
</tr>
<tr>
<td>movement of nares</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Look of fear</td>
<td>None</td>
<td>Eyes wide open, facial muscles tense, brow furrowed, mouth open, teeth together</td>
<td>Eyes wide open, facial muscles tense, brow furrowed, mouth open, teeth together</td>
<td></td>
</tr>
</tbody>
</table>

**Total** = 0 - 16

**Instruction for use:**
1. RDOS is not a substitute for patient self-report if able.
2. RDOS is an adult assessment tool.
3. RDOS cannot be used when the patient is paralyzed with a neuromuscular blocking agent.
4. RDOS is not valid in bulbar ALS or quadriplegia.
5. Count respiratory and heart rates for 1 min; auscultate if necessary.
6. Grunting may be audible with intubated patients on auscultation.
7. Fearful facial expressions:

**Abbreviations:** ALS, amyotrophic lateral sclerosis; RDOS, Respiratory Distress Observation Scale.

Copyright © 2015 American Association of Critical-Care Nurses. Unauthorized reproduction of this article is prohibited.
ventilatory support to allow a natural death. Opioids and/or benzodiazepines are routinely administered before, during, and after as an integral component of the ventilator withdrawal process to prevent or relieve dyspnea and/or respiratory distress. Little empirical evidence is available to guide the conduct of this common procedure, thus, clinicians rely on intuition, varying levels of experience, or local practice customs. Most patients undergoing terminal ventilator withdrawal are unable to provide a dyspnea self-report.

Preparation
When the plan to withdraw mechanical ventilation is known 24 to 48 hours in advance of the process, the administration of dexamethasone (4 mg every 6 hours) may reduce the development of postextubation stridor. In addition, administering a diuretic to the patient who has interstitial pulmonary edema as evidenced by lung auscultation or radiography will minimize respiratory distress during spontaneous breathing and/or retained airway secretions. Cuff-leak testing predicts which patients are at high risk for postextubation laryngeal edema and the resulting airway obstruction and stridor. A cuff-leak test entails measuring the volume of air loss when the endotracheal tube cuff is deflated prior to extubation. Air loss of less than 180 mL predicts postextubation stridor.

Premedication
Not all patients undergoing ventilator withdrawal will require premedication, such as those who are comatose without signs of respiratory distress. Premedication is recommended if respiratory distress can be anticipated. Opioids and benzodiazepines are the most commonly used medications to prevent dyspnea during ventilator withdrawal, although reported doses have been highly variable.

Withdrawal Process
Rapid weaning and turning the ventilator off without weaning (1 step), also known familiarly as terminal extubation, are conventional withdrawal methods. Research is needed to determine whether both methods are acceptable. Rapid weaning may be indicated in cases where the patient may experience distress because it affords an opportunity to restore the patient to a previous ventilator setting until the distress is relieved. The 1-step method may be indicated for unconscious patients who are unlikely to experience distress. Additional research is needed about ventilator weaning approaches at the end of life.

Exhution Considerations
Maintaining the endotracheal tube in the presence of a swollen or protuberant tongue or a failed cuff-leak test will prevent the development of partial or complete airway obstruction and stridor, which may be a source of distress for the patient and/or the family. Stridor is treated effectively with an aerosol treatment of racemic epinephrine 2.25% (22.5 mg/ml in 3 mL of normal saline).

Postwithdrawal Considerations
Postventilator withdrawal oxygen is not necessary unless the patient is hypoxic with respiratory distress. Continuing care in the ICU is important if the predicted duration of survival after ventilator withdrawal can be measured in minutes to hours. Patients who are likely to die quickly after ventilator withdrawal may have concurrent multiple organ system failures and/or severe hypoxemia. Patients who are likely to live hours to 1 day or more may include patients with neurological illness or injury but who have no other major organs in failure. Other predictors for duration of survival after ventilator withdrawal have been reported, including need for vasopressors and older age.

Anxiety
Anxiety is a normal human response to the anticipation of a threat that is real or perceived. Anxiety is expected among alert patients, particularly when uncomfortable procedures are planned or when the patient has previously experienced the procedure. Anxiety also can be anticipated during goals of care discussions if the patient is able to participate.

Prevalence
Among critically ill patients able to give a symptom self-report, anxiety ranged from 58% to 63%. The prevalence of anxiety among patients unable to report is unknown but likely to be small because by its nature anxiety entails awareness and interaction.

Prevention
Reassuring presence by the nursing staff and/or the patient’s family may minimize the
development of anxiety. Presence can be a powerful intervention but may be more effective when the nurse is familiar with the patient; hence, continuity of assignments is an important consideration. Preprocedure explanation is a standard of care that may allay procedural anxiety.

Assessment
The simplest assessment is to ask the patient, “are you anxious?” Synonymous words used by patients include “worried” or “scared.” The Faces Anxiety Scale is a visual analog scale for patients unable to verbalize or write. Nonspecific behaviors associated with anxiety include restlessness, trembling, cold hands, diaphoresis, and tachycardia.

Treatment
Most patients will experience some anxiety during a critical illness that does not warrant treatment other than frequent, comprehensive explanations from clinicians about care. An increased bedside presence by clinicians and the patient’s family are likely to reduce anxiety. A need for increased presence is evident when the patient’s signs of anxiety increase as the nurse leaves the room or by frequent calls for the nurse or use of the call light.

Anxiety may require the use of medications. The choice of medication is based on the goal. Short-acting benzodiazepines, such as lorazepam (1 mg) or midazolam (0.5 mg), are useful if the goal is to mitigate mild to moderate anxiety. Propofol (0.005 mg/kg per minute) and dexmedetomidine (0.2–0.7 mg/kg per minute) are sedative drugs that may have a role if anxiety is severe and the treatment goal is sedation. For instance, if a patient who is being treated with mechanical ventilation is anxious about a weaning trial, a short-acting nonsedating benzodiazepine may be best. For other patients, such as those who experience ongoing anxiety with restlessness, a continuous sedative infusion such as propofol or dexmedetomidine may be indicated.

Delirium
Delirium is a syndrome characterized by acute onset of cognitive dysfunction with a change or fluctuation in mental status, inattentiveness, and especially disorganized thinking or an altered level of consciousness. Agitated delirium, also known as hyperactive delirium, often is associated with delusion and/or hallucinations.

Prevalence
Delirium is one of the most common complications of critical illness, affecting as many as 80% of patients, and it is a common complication among patients nearing the end of life; thus, patients at risk of dying in the ICU have a very high likelihood for the development of delirium. The causes are multifactorial and include advanced age, preexisting dementia, medications (opioids, benzodiazepines, anticholinergics), sleep deprivation, hypoxemia, metabolic abnormalities, history of substance misuse, prolonged sedation, prolonged use of restraints, and brain lesions.

Prevention
Orientation protocols for high-risk patients include environmental adjustments, such as opening shades and turning on or off lights and room clocks. Ensure that patients with sensory disorders have their glasses or hearing aids. Minimize sensory overload and provide uninterrupted periods for sleep.

Assessment
The Confusion Assessment Method—ICU and the Intensive Care Delirium Screening Checklist have the best psychometric properties in adult patients in the ICU and can be used with those who are being treated with mechanical ventilation. Routine screening, preferably twice each day, affords the opportunity for early detection and intervention.

Treatment
Some patients with delirium are calm and in no distress, and pharmacological treatment may not be indicated. However, agitated delirium produces distress for patients and their families, increases the risk of patients harming themselves or others, and warrants medical management. A very small evidence base suggests that haloperidol (<3.5 mg/d), risperidone (2-mg oral dissolving tablet), and olanzapine (5-mg oral dissolving tablet) were equally effective in treating delirium, with few adverse effects. Patients at risk of torsades de pointes must have their treatment goals evaluated prior to the use of haloperidol, because prolongation of the QT interval is a risky adverse effect. This risk is of little consequence if the patient with agitated delirium is dying and treatment goals focus on palliation. Carefully designed, adequately powered studies of critically ill patients receiving palliative care are needed.
needed to determine effective delirium protocols. Agitated delirium also may be treated effectively with sedatives such as benzodiazepines, propofol, or dexmedetomidine. Haloperidol is the medication of choice if the patient is awake and interactive with family as a sedative will preclude further communication.

**Death Rattle**

Death rattle is a naturally occurring patient condition during the last hours of life. The term is applied to the noisy secretions that are audible and can be distressing for both professional caregivers and families of dying patients.48,49 A death rattle is produced when the patient is near death and is too weak or hypersomnolent to clear or swallow pharyngeal secretions; even small volumes of secretions will produce sounds in the resonant pharyngeal space.

**Prevalence**

Death rattle usually becomes audible 24 to 48 hours before death. About half of patients who are dying will experience death rattle.50,51 The prevalence may be higher among patients in the ICU, particularly those who have volume overload. Studies of death rattle prevalence among patients in the ICU could not be found.

**Treatment**

Patients with death rattle in one prospective observation study were found to have no respiratory distress.50 Current treatments to eliminate the noise of death rattle include hyoscine transdermal or subcutaneous, atropine drops administered by mouth, and parenteral glycopyrrolate, but no evidence shows that these agents are superior to placebo.52 Because patients are not experiencing distress and antisecretory agents are minimally effective, there is cause to question why they are still being used or at the very least why they are not discontinued when death rattle persists. Currently, no patient justification exists for the initiation of antisecretory medications.50,53

An alternative to medication is side-lying positioning of the patient, which may afford secretion draining and minimization of upper airway sounds. Oral suctioning and gentle pharyngeal suctioning may reduce the noise produced by secretions. Aggressive pharyngeal suctioning carries the potential burden of patient discomfort and should be used only when secretions are voluminous. Interventions to assuage family or staff discomfort with death rattle have not been tested, but education and assurances that the patient is not experiencing distress may be helpful.

**Refractory Symptoms and Palliative Sedation**

An ICU patient has intolerable, refractory symptoms when the symptoms are not responsive to conventional palliative interventions and continue to cause severe patient distress. Consider a consultation from a palliative care specialist in cases of nonresponsive symptoms.

Palliative sedation is the use of nonopioid medications to sedate the patient to unconsciousness when less extreme analgesia and/or sedation has not achieved symptom relief.54 Palliative sedation is not the use of therapeutic sedation to induce coma or to achieve ventilator synchrony or to treat seizures. Palliative sedation is not the careful titration of opioids to achieve pain relief, regardless of needed dose. Palliative sedation should be carefully considered only after all possible interventions to relieve symptom distress have been tried.

**Summary**

Pain, dyspnea, anxiety, and delirium are common, distressing symptoms among dying critically ill patients receiving palliative care. Valid, reliable means of assessment include seeking the patient’s self-report (pain, dyspnea, anxiety) and using behavioral observation scales specific to the symptom, such as the Critical-Care Pain Observation Tool or the RDOS. Routine assessment for delirium leads to early detection and affords early treatment. An evidence base for medications and other interventions to reduce these symptoms was described. Gaps in the evidence include knowing the prevalence of distressing symptoms of pain, dyspnea, and anxiety among critically ill patients who cannot self-report as typifies the sickest ICU patients and those who may die. Well-designed, adequately powered studies are needed to test known palliative care interventions with the population of patients who are receiving intensive care.

**REFERENCES**


