

Give Them Comfort: Controlling COPD Symptoms at the End of Life

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Patients' last days of COPD can be characterized by depression, anxiety, pain, and dyspnea. Clinicians must be alert to patient discomfort and offer appropriate palliative care and reassurance.

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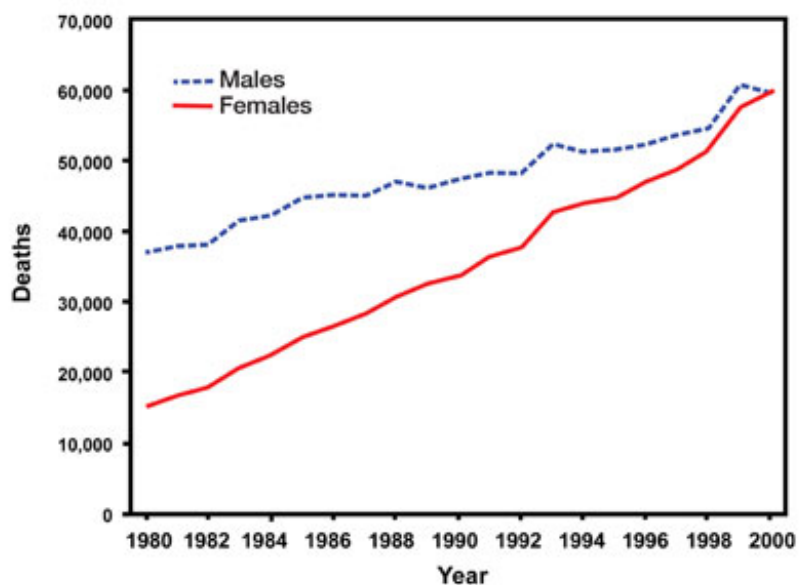


Considered as a long course of chronic disease that is characterized by repeated exacerbations and remissions, chronic obstructive pulmonary disease (COPD) indisputably leads to a clear and steady decline.¹ For the purposes of this paper, focus will be given to the two diseases that are considered to be the hallmark of COPD: chronic bronchitis and emphysema. More specifically, this article will explore various methods for controlling the sometimes devastating symptoms associated with COPD toward the end of life.

When the patient gets to these “last days,” careful attention to symptom control can prevent, minimize, or eliminate distress, thus improving the quality of life until the time of death. In addition to exploring methods of reducing the suffering that is experienced by the patient, attention will also be directed at the importance of considering family members and loved ones during this difficult stage of the deadly disease. Since COPD is a progressive disease as opposed to a curable one, focusing our energies and resources on symptom control is the best way that we as health care providers can serve these patients.

Rising Mortality Rate

According to the Chronic Obstructive Pulmonary Disease Surveillance Report,² published in the Morbidity and Mortality Weekly Report in 2002, that looked at the mortality rate from the years 1971 through 2000, COPD deaths rose steadily each year. Particularly interesting in this report were the differences in death rates between men and women. Although both males and females have shown increases in their death rates each year, female deaths have



CHRONIC OBSTRUCTIVE PULMONARY DISEASE SURVEILLANCE—UNITED STATES, 1972-2000.

increased at a more dramatic rate, and by the year 2000 had nearly surpassed the death rate of males (Figure 1).²

The costs associated with COPD are staggering, with in excess of \$30 billion spent annually. The average Medicare expenses for patients with the disease are 2.5 times greater than for those without the disease. COPD is currently the fourth leading cause of death in the United States and is expected to move to the number-three position by the year 2020. Approximately 112,000 people died of COPD in 1998 alone, and the mortality rate of COPD continues to rise each year (Figure 2).³

Within the final year of life, COPD patients will typically have an FEV₁ of less than 30% of predicted, a declining performance in their activities of daily living, and an uninterrupted-walk distance of only a few steps. The patient usually will have at least one urgent hospitalization within the previous year, have left-heart and/or other comorbid diseases, and show signs of depression. These patients are generally elderly, and many are unmarried. The divorce rate among those patients with COPD has been shown to be increased compared to those without the disease.^{1,4}

Assessing the Symptoms

In the final days or hours of patients with COPD, symptoms such as hypersomnolence, disorientation, irregular breathing patterns, mottled skin, cool extremities, reduced production of urine, and generally altered vital signs are all observed. Retained secretions in the upper airway are also quite common, as is a reduced interest in food and/or water.

Strong patient assessment skills are of vital importance when caring for the COPD patient. Failure to recognize symptoms, and thus not providing relief for such symptoms, does a significant disservice to these patients during their final days. Patients in this condition have difficulty accurately describing their symptoms, and the subjective nature of self-reported symptoms often makes them difficult to decipher. Clinician accuracy when reporting a patient's symptoms has also been found to be poor. Utilization of a symptom measurement tool must be considered when caring for these patients.

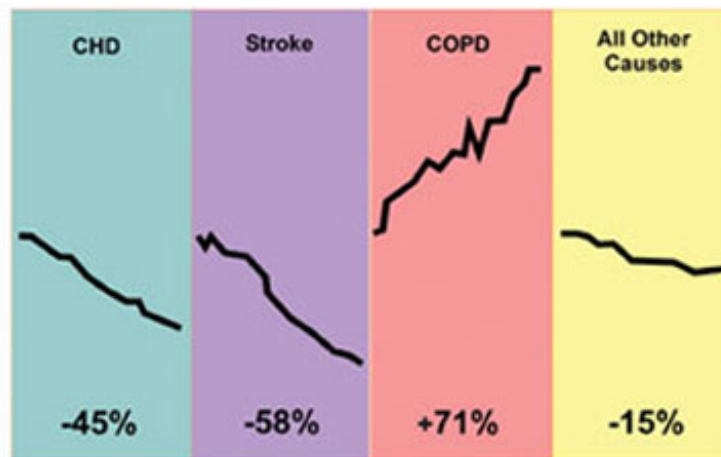
A variety of symptom-measurement instruments have been developed and are now used to assess the COPD patient. Three of the more common tools are the Memorial Symptom Assessment Scale (MSAS),⁵ the Rotterdam Symptom Checklist (RSC),⁶ and the Visual Analog Scale (VAS).⁷ Formal dyspnea assessment tools are also used.

There are barriers to the assessment of symptoms, because patients with advanced disease typically suffer with fatigue, depression, and delirium. Many, if not most, of these patients experience more than one symptom, making assessment difficult. Other barriers include the fact that caregivers are frequently not willing to take the time necessary to gain a thorough understanding of the patient's symptoms, and the disease itself and its progression are often difficult to discuss for both patients and caregivers.

In a study that evaluated the perceptions of family members regarding the most severe symptoms that their loved one had experienced during their final 3 days prior to death, dyspnea, cough, pain, and confusion, in that order, were rated as being the most significant, with more than 90% of them rating dyspnea as the most severe.⁸

Other common distressing symptoms associated with COPD are anxiety, depression, and anorexia/cachexia. When contemplating the management of these symptoms, we should consider general principles of palliation and determine and treat the underlying cause of the symptoms whenever possible. When attempting to relieve symptoms, clinicians need to pay careful attention to avoid the addition of any new problems. We need to give careful consideration as to whether our treatment is worthwhile for the patient as well as their family, and it is important to discuss all reasonable treatment options with both the patient and family.

Breathless



MORTALITY OF COPD IS INCREASING—COPD is the only leading cause of death that is increasing.

According to the National Lung Health Education Program (NLHEP),⁹ “dyspnea, the sensation of breathlessness or inadequate breathing, is the most common complaint of patients with cardiopulmonary diseases.” Dyspnea occurs when an imbalance exists between the perceived need to breathe and the perceived ability to breathe. It is the “experience” of shortness of breath, and it may or may not be associated with suffering. Dyspnea is often associated with panic and anxiety. The panic may present as dyspnea, while dyspnea may induce panic.

When trying to identify dyspnea, oxygen saturation is not a reliable indicator, and a patient's own report or signs of

agitation or anxiety are considered the best means of identifying dyspnea. The patient who is dying of COPD or lung cancer will typically experience a worsening in their dyspnea level as their disease progresses. In addition to the previously discussed panic, fear, and anxiety, patients may also become depressed and angry.

Causes of dyspnea in the COPD patient include such things as airway obstruction or restriction, hypoxemia, and deconditioning of the respiratory muscles. Cardiovascular issues such as congestive heart failure or cor pulmonale can also result in dyspnea. Anxiety, fear, anemia, and fluid overload may equally contribute to the symptom. The ability to control dyspnea in end of life COPD patients is of tremendous importance for these patients and their families.

Easing the Symptoms

Pharmacotherapy options for controlling dyspnea vary, depending on the specific cause for the discomfort. Bronchodilators are frequently given to the COPD patient to relieve bronchospasm. For the patient who develops CHF, diuretics can be helpful in reducing excess fluid. Opioids have shown some benefit in reducing dyspnea, with oral administration being the preferred route. Oxygen therapy is used when indicated and tolerated. For the patient who experiences anxiety, benzodiazepines are often used. Phenothiazine, an antipsychotic drug, may be used in cases of severe agitation. Anti-inflammatory side effects are not usually an issue during end of life care, therefore the use of corticosteroids is not generally indicated.

Much attention has been given to the use of inhaled/nebulized opioids, with most positive outcomes being based on anecdotal experiences. It is thought by some that inhaled opioids may act directly on lung afferent nerves, thus altering the perception of breathlessness. It is believed that they may diminish the response to hypoxia and hypercapnia at the chemoreceptor level or may exert a peripheral effect on opioid receptors in the lung. It is important to note that nebulized morphine may cause histamine-mediated bronchospasm during the first nebulization, so caution should be taken to ensure that treatment for bronchospasm is readily available.

Of 30 studies that were found in a PubMed review, only two prospective, randomized, double-blinded, placebo-controlled trials have examined the efficacy of aerosolized opioids on dyspnea in patients with advanced disease. Nosedá et al¹⁰ found no benefit from 10 mg or 20 mg of aerosolized morphine citrate in treating dyspnea in 17 patients with severe chronic lung disease or metastatic cancer. Bruera et al¹¹ found that aerosolized morphine sulfate given to patients with metastatic cancer was as effective as that given subcutaneously. Why the large discrepancy in the two studies? A possible explanation may be that in the Nosedá study, 12 out of the 17 patients had COPD and only three had metastatic cancer. Two of the three with cancer died, and their data was not included. The Nosedá investigators assessed dyspnea 10 minutes after completion of nebulization, which may have been an insufficient amount of time.

According to a paper by Kallet,¹² higher-level clinical evidence consistently shows that aerosolized opioids are not effective in improving dyspnea or exercise tolerance in patients with chronic cardiopulmonary diseases, including COPD and idiopathic pulmonary fibrosis. Low level clinical evidence supports use of aerosolized opioids for palliation of dyspnea in patients with advanced cancer and cystic fibrosis. Low level clinical evidence also suggests that aerosolized furosemide may reduce dyspnea in both groups of patients.

According to the Global Initiative for Chronic Obstructive Lung Disease (GOLD),¹³ oral and parenteral opioids are effective for treating dyspnea in COPD patients with advanced disease. There is insufficient data to conclude whether nebulized opioids are effective. However, some clinical studies suggest that morphine used to control dyspnea may have serious adverse effects and its benefits may be limited to a few sensitive subjects.

In terms of dyspnea treatment principles, opioids and benzodiazepines are considered by some to be the mainstays of palliative therapy for dyspnea. Which one is more effective? A patient who complains of difficulty breathing but who lacks associated anxiety is more likely to benefit from an opioid. A patient who complains of anxiety associated

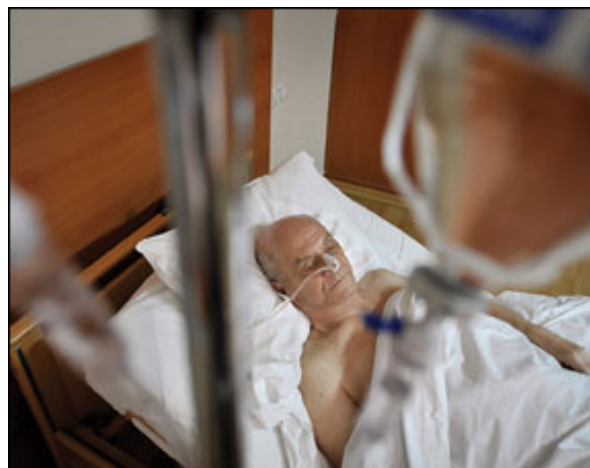
with breathing might be better treated with a benzodiazepine, at least initially. Many patients will require both types of medications.

In addition to pharmacological treatment of the symptoms of dyspnea, there are also nonpharmacological methods that have been shown to benefit some patients. These include such things as elevating the head of the bed, massage therapy, relaxation therapy, and pursed-lip breathing. Many end of life COPD patients find that using a fan provides them with a certain level of relief. According to a study at Johns Hopkins, fans improve dyspnea by stimulating receptors in the trigeminal nerve located in the cheek and nasopharynx, altering the perception of breathlessness.¹⁴

Easing the Pain

Pain control can be an issue for these patients, although most pain can be alleviated with medication use. It is best to administer pain medications on a regular basis, as opposed to allowing them to wear off. Waiting until the patients request the medications could result in a delay in their administration and an exacerbation of the pain. This may lead to increased anxiety for both the patients and their families.

Another issue that must be addressed when caring for these patients is that of cough control. Although cough is a normal protective mechanism, it may also be induced by such things as infection, reflux, aspiration, and airway disease. Cough may also be drug-induced. Expectorants and mucolytics have been found to be ineffective, while oral narcotics, such as morphine and codeine, have been shown to provide some relief. Nebulized lidocaine has been used in cases of severe cough, although this may increase the patient's risk of aspiration.



During the final 24 to 48 hours of life, patients may demonstrate what is commonly known as “death rattle.”¹⁵ This is a sound that is caused by airflow passing through secretions that accumulate in the back of the throat. Although at this point the patient is usually unaware that this is occurring, family members as well as staff may find this to be distressing. Education of family members is important, and repositioning the patient may be helpful. Oropharyngeal suctioning, although it may be helpful, should be avoided if it causes the patient to gag or cough. The use of anticholinergic drugs may be helpful if used prior to the buildup of secretions.

Of the utmost importance for these patients is that they are made as comfortable as possible. All patients with a terminal condition, such as end of life COPD, should be provided access to palliative care services. The National Consensus Project for Quality Palliative Care¹⁶ states: “Palliative care is both a philosophy of care and an organized, highly structured system for delivering care. The goal of palliative care is to prevent and relieve suffering and to support the best possible quality of life for patients and their families, regardless of the stage of the disease or the need for other therapies.” This specialized care is delivered by an interdisciplinary care team that includes such professionals as physicians, nurses, respiratory therapists, physical therapists, nutritionists, pharmacists, chaplaincy representatives, and other health professionals.

The previously mentioned consensus guidelines further state: “Palliative care affirms life by supporting the patient and family’s goals for the future, including their hopes for cure or life-prolongation, as well as their hopes for peace and dignity throughout the course of illness, the dying process and death. Palliative care aims to guide and assist the patient and family in making decisions that enable them to work toward their goals in the course of one’s illness, condition or injury.”¹¹

Role of RTs

As part of the palliative care process, respiratory therapists may recommend providing, or be requested to provide, oxygen therapy, bronchodilators, secretion clearance techniques, noninvasive ventilation, pulse oximetry and capnography monitoring, as well as communication with the patient and family members. The respiratory therapist is also in a position to provide support and reassuring words, and perhaps even hand-holding, during the final days and hours of the patient's life. We may be unable to cure these patients of their devastating disease, but we can all play a significant role in the relief of symptoms, and in providing our patients with the respect, care, support, and comfort that they deserve.

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