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# ELDER CARE

## A Resource for Interprofessional Providers

### Palliative Care of Dyspnea in Patients with Advanced COPD

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Dyspnea is a common symptom in patients with advanced chronic obstructive pulmonary disease (COPD), with increasing prevalence at the end of life. Dyspneic patients experience difficult, labored, or uncomfortable breathing and often describe breathlessness, air hunger, or excessive effort to breathe. Patients with dyspnea may also experience anxiety, fear, and panic, all of which may increase dyspnea severity in the so-called “dyspnea-anxiety-dyspnea cycle.”

#### Diagnosis

The gold standard for diagnosing dyspnea in advanced COPD is the patient’s self-report. The severity of dyspnea can be assessed with rating scales, such as a visual analog or numeric rating scale similar to those used to assess severity of pain. Objective signs like tachypnea, oxygen saturation, and arterial blood gas results may not accurately reflect the patient’s distress.

#### General Management

The initial step in the treatment of dyspnea in patients with advanced COPD is to evaluate and treat underlying causes. Potential contributors to worsening dyspnea include bronchospasm, pleural effusion, pulmonary edema, pulmonary embolism, hypoxemia, or infection. Even if the cause is unclear, however, or if disease-specific therapies have been exhausted, aggressive symptom management is crucial. The goal of palliative symptom management is to relieve the patient’s sense of breathlessness. Management can be pharmacologic and/or non-pharmacologic.

#### Pharmacological Management

Pharmacologic palliation of severe dyspnea may involve the use of opioids, oxygen, and/or benzodiazepines (Table 1).

**Opioids** Systemic opioids are the mainstay of palliative pharmacologic management of severe dyspnea near the end of life, and their effectiveness has been demonstrated in clinical trials.

A 2016 Cochrane review and research letter report low to moderate level evidence supporting the effectiveness of low-dose opioids for the relief of breathlessness in severe illness. Both oral and parenteral opioids can provide relief from dyspnea, and they should be dosed and titrated with consideration of a patient’s renal, hepatic, and pulmonary function, as well as the patient’s current and past opioid use.

For patients with advanced COPD receiving palliative care who have severe dyspnea, systemic opioids are recommended. In an opioid-naïve patient, initial therapy should be morphine sulfate (2.5-5.0 mg orally) as a single dose. If tolerated, the dose can be administered every four hours. An additional dose can be available every hour in between scheduled doses for as-needed relief of severe dyspnea.

Oxycodone or hydromorphone in equianalgesic doses are alternatives to morphine. Nebulized opioids are not recommended, given the current evidence.

#### Table 1. Key Medications for Palliation of Dyspnea

##### • Opioids

Morphine is usual first choice.

Oxycodone or hydromorphone are alternatives.

##### • Oxygen

Administer by nasal cannula (see Table 2).

##### • Benzodiazepines

Consider when significant anxiety contributes to dyspnea.

Clinicians considering opioid therapy for palliation of dyspnea often express concern about inducing respiratory depression. Studies have not documented clinically relevant respiratory adverse events from low-dose opioids used to treat chronic breathlessness. However, appropriate monitoring and individual dose titration are crucial to avoid respiratory depression and other side effects.

#### TIPS FOR PALLIATIVE CARE OF DYSPNEA IN PATIENTS WITH ADVANCED COPD

- Use patient report as the gold standard for diagnosing dyspnea. Dyspnea is subjective and often unrelated to objective findings like tachypnea, oxygen saturation, or respiratory muscle use.
- Consider prescribing low dose oral or parenteral opioids for patients with advanced COPD receiving palliative care to help alleviate severe dyspnea.
- Consider non-pharmacological modalities, like an appropriate room environment, attention to body positioning and breathing technique, and use of physical therapy modalities like muscle strengthening and walking aids to conserve strength.
- Recent reviews suggest acupuncture and CBT modalities may be beneficial in relieving breathlessness in appropriate patients.

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As opposed to palliative management of dyspnea near the end of life, for COPD patients with refractory exertional dyspnea, the use of daily low-dose opioids is controversial. The most recent study, published in 2022 did not support the use of daily low-dose morphine to relieve exertional breathlessness in COPD patients.

**Oxygen** Supplemental oxygen is standard therapy for symptomatic treatment of dyspnea in COPD patients who are hypoxemic on room air. In patients who are not hypoxemic, supplemental oxygen has not been shown to improve dyspnea when compared with room air. The psychosocial components of dyspnea and the medical symbolism of oxygen therapy are important aspects to consider in the palliative management of refractory dyspnea in COPD patients. If the patient or family desires oxygen, a therapeutic trial of oxygen may be appropriate (Table 2).

## Table 2. Key Points About the Use of Oxygen for Palliative Care in Advanced COPD

- Oxygen can provide relief of dyspnea for patients who have hypoxemia. Use humidified oxygen via nasal prongs at rate of 1-7 liters/min, aiming for oxygen saturation  $\geq 90\%$  if tolerated.
- Consider a brief trial of oxygen, even when a patient is not hypoxemic, if oxygen is requested by patient or family.
- Using a fan that blows cool air across the face may be an effective alternative to oxygen therapy.

**Benzodiazepines** Because of the complex interaction between anxiety, panic, and the perception of dyspnea, anxiolytics are often added to opioids as an adjuvant therapy for dyspnea. A recent Cochrane review found insufficient data to support routine use of benzodiazepines in the palliative therapy of advanced COPD. Therefore, benzodiazepines are not part of the routine management of dyspnea. However,

benzodiazepines may be considered second or third-line options when opioids and non-pharmacologic treatments do not provide adequate control of breathlessness, especially at the end of life, for patients who are very anxious and distressed.

## Non-Pharmacological Management

Non-pharmacologic interventions for breathlessness in advanced lung disease are listed in Table 3. Interventions need to be tailored to the patient, for the stage of disease and disease trajectory. Some therapies require a high level of motivation, support, and expertise. There are recent reviews of acupuncture and cognitive behavioral therapies for COPD patients, and although they include only small numbers of studies and patients, they report encouraging results.

## Table 3. Non-Pharmacological Interventions for Breathlessness in Patient with Advanced COPD

### Room Environment and Positioning

- Cool room with low humidity, free of dust or smoke.
- Breeze from open window or fan, directed towards face.
- Sitting upright in bed or chair.

### Breathing Exercises

- Pursed-lip diaphragmatic breathing: close mouth, inhale slowly through nose, purse lips as if whistling, exhale slowly.

### Physical Therapy and Mobility Aids

- General muscle strengthening and pulmonary rehabilitation
- Walking aids to conserve strength.
- Neuromuscular electrical stimulation.

### Acupuncture and Cognitive Behavioral Therapy (CBT)

- Acupuncture may improve dyspnea and health quality of life.
- CBT can be effective in treating and preventing panic attacks and decreasing perceived dyspnea.

## References and Resources

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