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March 2011 (updated May 2015)

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# 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 patients with advanced COPD is the patient's self report. Objective signs like tachypnea, oxygen saturation, and arterial blood gas results may not accurately reflect the patient's distress. 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.

**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 dyspnea involves the use of opioids, oxygen, and/or benzodiazepines (Table 1).

**Opioids** Systemic opioids are the mainstay of palliative pharmacologic management of severe dyspnea, and their effectiveness has been demonstrated in numerous clinical trials. A recent consensus statement from the American College of Chest Physicians indicates that 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.

Most palliative care experts recommend that for palliative treatment of severe dyspnea 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. There is little evidence at this time of benefit from nebulized opioids.

**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 anxiety contributes to dyspnea |

Clinicians considering parenteral opioid therapy for palliation of dyspnea often express concern about inducing respiratory depression. A Cochrane review of opioids for the treatment of severe dyspnea noted that in studies in which oxygenation and carbon dioxide levels were reported, no significant changes were found after opioid administration. Indeed, there is no evidence of significant respiratory compromise when opioids are appropriately dosed and slowly titrated for palliative treatment of refractory dyspnea.

***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.
- Prescribe oral or parenteral opioids for palliative care of dyspnea. Opioids can alleviate dyspnea and improve quality of life in advanced COPD.
- Consider benzodiazepine therapy if anxiety or panic symptoms are contributing to dyspnea.
- Also 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.

Continued from front page

**Oxygen** Oxygen clearly benefits patients with hypoxemia, but in the absence of hypoxemia, the role of palliative oxygen in the treatment of dyspnea is controversial. A recent double-blind randomized controlled trial of oxygen vs. room air (both given by nasal cannula) was conducted; 62% of participants had COPD. This study concluded that room air is as effective as oxygen for relieving dyspnea in those without hypoxia (< 90% oxygen saturation at rest) and most of the improvement occurred within the first 72 hours of therapy. It was hypothesized that both interventions provide movement of air over the face and nose that air movement may lead to better symptom control. There is an important psychosocial component to dyspnea, however, and if the patient or family desires oxygen, a therapeutic trial of oxygen is 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 ≥90% if tolerated.
- Consider a brief trial of oxygen, even when a patient is not hypoxemic, if oxygen is requested by patient or family.
- Use of 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. Despite widespread use, a recent review found limited data to support routine use of benzodiazepines in the palliative therapy of advanced COPD.

**Non-Pharmacological Management**

Non-pharmacologic interventions for palliative care of dyspnea in advanced lung disease are listed in Table 3. All appear to be effective interventions for relieving the sensation of dyspnea, and many can be administered at the patient's bedside.

**Table 3. Non-Pharmacological Therapy for Palliative Care of Dyspnea in Patient with Advanced COPD**

**Room Environment**

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

**Positioning**

- Sitting upright in bed or chair.
- Sitting at edge of bed, resting upper body on beside table.

**Breathing**

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

**Physical Therapy**

- General muscle strengthening.
- Walking aids to conserve strength.

Some clinicians also prescribe non-invasive ventilation for patients with advanced COPD. Because this treatment may prolong life, the goals of patients with late-stage COPD must be clearly understood and documented before recommending this intervention. If used, the patient's goals should be frequently assessed, with comfortable withdrawal of this intervention if the goals are not being met.

**References and Resources**


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Supported by: Donald W. Reynolds Foundation, Arizona Geriatric Education Center and Arizona Center on Aging

This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UB4HP19047, Arizona Geriatric Education Center. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.