Palliative Care for COPD Patients

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COPD: Definition

- Chronic obstructive pulmonary disease (COPD) is a **preventable and treatable** disease state characterized by airflow limitation that is not fully reversible.
- The airflow limitation is usually **progressive** and is associated with an abnormal inflammatory response of the lungs to noxious particles.
- Although COPD affects the lungs, it also produces significant **systemic consequences**.

Recent staging system

GOLD 1
- Mild
- FEV₁ > 80%

GOLD 2
- Moderate
- 50% < FEV₁ < 80%

GOLD 3
- Severe
- 30% < FEV₁ < 30%
- Very severe
- FEV₁ < 30%

Source: Curr Opin Pul Med © 2016 Lippincott Williams & Wilkins
Stages of COPD

COPD Stage I: Mild COPD
- **Stage 1**
  - 90% Normal Lung Function

COPD Stage II: Moderate COPD
- **Stage 2**
  - 80% - 90% Normal Lung Function

COPD Stage III: Severe COPD
- **Stage 3**
  - 60% - 70% Normal Lung Function

  COPD Stage III typically involves severe symptoms of dyspnea, thinness of breath, and frequent COPD exacerbations.

COPD Stage IV: Very Severe COPD
- **Stage 4**
  - Less Than 30% Normal Lung Function

  COPD Stage IV presents very severe and rare, and thus decreases the life quality with very COPD exacerbations.

Lung function FEV1 levels might lower that than 30%.
The burden of COPD
Epidemiology

COPD is the **fourth** leading cause of death.

COPD is a chronic disease affecting 6-10% of the adult population worldwide.

- While mortality from CV disease, stroke, and cancer decreased over the last two decades, COPD mortality in the US has **doubled**.
- Patients who have COPD in developed countries are often hospitalized 3-4 times per year. Many of them are in an ICU.
COPD Patients:

• Affect on the quality of life:
  
  intractable dyspnea
  •
  fatigue
  •
  social isolation
  •
  high level anxiety and depression.
  •

The lack of recourse to support in the community.
Terminal Disease?
PALLIATIVE MEDICINE

LIFE-LIMITING ILLNESSES
A comparison of palliative care and quality of life in COPD and Lung Cancer.
Thorax 2000;55(12):1000–6

- Compared symptoms and morbidity between 50 patients who had severe COPD (and at least one admission for respiratory failure) and 50 patients inoperable NSCLC.
- *None* of the patients who had COPD was offered or received input from palliative care specialists, whereas *30%* of the patients who had cancer received such care.
A comparison of palliative care and quality of life in COPD and Lung Cancer.

Thorax 2000;55(12):1000–6

COPD patients had significantly worse physical, social, and emotional functioning and more anxiety and depression (90% versus 52%).

28% of the patients who had COPD were housebound, and 36% were chair bound, compared with 36% and 10% of patients with lung cancer.
Support Study - A controlled trial to improve care for seriously ill hospitalized patients.

JAMA 1995

Compared with patients with lung cancer:

- patients with COPD were much more likely to die in the intensive care unit (ICU)
- on mechanical ventilation
- and with dyspnoea

- patients with COPD, 56% had severe dyspnea and 21% had severe pain.
- patients who had lung cancer, 32% had severe dyspnea and 28% had severe pain.
A comparison of symptom prevalence in far advanced cancer, AIDS, heart disease, COPD and renal disease.


• Three common symptoms were present in more than 50% of patients across all five diseases: pain, breathlessness, and fatigue.
• Patients who have COPD have a reduced quality of life and a heavy burden of symptoms that is at least as great if not greater than patients who have advanced lung cancer.
• The most common symptoms are dyspnea, pain, fatigue, and depression
Differences in health care utilization at the end of life among patients with COPD and patients with lung cancer

Arch Intern Med 2006;166(3):326–31

- During the last 6 months of life, patients who had COPD were twice as likely to be admitted to the ICU.
- Were five times more likely to be in an ICU longer than 2 weeks.
- Received fewer palliative medications.
The current state of COPD and palliative care

Despite refractory symptoms and recurrent hospitalizations, patients with COPD die without access to palliative care.

Many physicians view palliative care only as care given to actively dying individuals rather than a multidisciplinary approach.

Consequently, patients with COPD are often not referred to palliative care recourses and have unmet needs at the end of life.
So Why Not?

Barriers to providing palliative care to patients with COPD
POOR PROGNOSTIC FACTORS IN COPD

- FEV1 < 30% predicted
- Oxygen dependence
- One or more hospital admissions in the previous year for an acute exacerbation of COPD
- Left heart failure or other co-morbidities
POOR PROGNOSTIC FACTORS IN COPD

- Weight loss or cachexia
- Decreased functional status
- Increasing dependence on others
- Age >70 yrs
Trajectory of chronic obstructive pulmonary disease
Barriers to providing palliative care to patients with COPD

- Difficulties of prognosis
- Difficulties with communication
- Health-systems issues
Potential barriers of palliative care in patients with advanced COPD

<table>
<thead>
<tr>
<th>Patient factors</th>
<th>Physician factors</th>
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</thead>
<tbody>
<tr>
<td>Unwillingness to discuss end of life</td>
<td>Uncertainly about the prognosis 0.1</td>
</tr>
<tr>
<td>Lack of knowledge about such type of care</td>
<td>Lack of recourse and time constraints 0.2</td>
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<tr>
<td>Loss of hope</td>
<td>Lack of confidence 0.3</td>
</tr>
<tr>
<td>Communication problems</td>
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</table>
Palliative care and COPD

Identifying patients appropriate for referral to palliative care: *the surprise question*

This method, encourages physicians to ask "would I be surprised if my patient were to die in the next 12 months?"

If the answer is no, proactive palliative care should be considered
Triggers to begin or intensify proactive palliative resources for patients with COPD

- Age $\geq 75^{35,54-56,61}$
- Comorbidities$^a,35,54,55,61-66$
- Change 6-minute walk by 50 m$^{53}$
- Functional dependence and patient reported minimal physical$^b$ activity$^{35,53,65,67}$
- Poor health-related quality of life$^c,35,57,65,68$
- $\text{FEV}_1 < 30\%^{9,54,66}$
- BMI $< 20\%^{61,69}$
- $\geq 1$ hospitalization within last year$^{55,65}$
Management:
Goals of treatment for COPD

• Improve quality of life, exercise tolerance, sleep quality, and survival

• To reduce dyspnea, nocturnal symptoms, exacerbations, use of rescue medications, and hospitalizations.
ELEMENTS OF EFFECTIVE PALLIATIVE CARE

- Management of dyspnea
- Oxygen therapy
- Nutritional support
- Anxiety and antidepressants
- Advance care planning
An Update on Pharmacologic Management of Chronic Obstructive Pulmonary Disease

Bronchodilators

β-agonists

short-acting β-agonists (SABA):

- albuterol and levalbuterol
- onset of effect is achieved in 3–5 min
- the duration is only about 4–6 h
- 'as-needed' form
**β-agonists**

**Several long-acting β agonists (LABA):**
- monotherapy and in combination with ICS or with long-acting muscarinic antagonists (LAMA)
- The TORCH (Towards a Revolution in COPD Health) trial was one of the largest studies showing a statistically significant improvement in time to exacerbation in the salmeterol arm as compared with placebo.
Anticholinergics

Short-acting muscarinic antagonists (SAMA) •

Long-acting muscarinic antagonists (LAMA) •
Anticholinergics

- effective bronchodilation
- reduce the frequency of exacerbations
- improvement in FEV1 when compared with placebo that is statistically significant
Combination Long-acting Muscarinic Antagonists and Long-acting β-agonists

for improved symptom control in late stage COPD, especially for patients in categories C and D

Initial results are positive for several LAMA/LABA combinations when compared with monotherapy and placebo.

Improve medication adherence in this sick patient population
Inhaled Corticosteroids

ICS are recommended for late stage COPD or in those with frequent exacerbations.

In TORCH, salmeterol/fluticasone has been shown to decrease rates of exacerbations.
Mucolytics

• May result in a small reduction in acute exacerbations and in the total number of days of disability for patients with moderate to severe COPD.

• A systematic review of studies comparing oral mucolytics with placebo for three to six months showed a small decrease in exacerbations from a baseline of 2.7 exacerbations per year to 2.0 exacerbations per year with treatment.
Corticosteroids (Oral)

• No significant improvement in patient-oriented outcomes, and long-term use is associated with significant harm.

• Switching from the use of oral to inhaled steroids is not associated with adverse outcomes.
Drug therapy of COPD in palliative care

- Benzodiazepines to control anxiety
- Antidepressants to improve mood
- Opioids and oxygen to control breathlessness
- Consider continuous subcutaneous infusion therapy of opioids, anti-emetics and anxiolytics
Palliative interventions for refractory dyspnea
Palliative interventions for refractory dyspnea

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<thead>
<tr>
<th>Oxygen</th>
<th>Pharmacologic</th>
<th>Non-pharmacologic</th>
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<tbody>
<tr>
<td>Hypoxemic ↑</td>
<td>Opioids</td>
<td>Rehabilitation ↑</td>
</tr>
<tr>
<td>Non-hypoxemic ↔</td>
<td>Oral ↑</td>
<td>Nutrition ↔</td>
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<tr>
<td></td>
<td>Parenteral ↑</td>
<td>Psychosocial support ↔</td>
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<td></td>
<td>Inhaled ↓</td>
<td>Breathing techniques ↑</td>
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<tr>
<td>Psychotropic drugs</td>
<td>Anxiolytics ↔</td>
<td>Positioning</td>
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<td></td>
<td>Phenothiazines ↓</td>
<td>Pursed lip breathing</td>
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<td></td>
<td>Selective serotonin reuptake inhibitors ↔</td>
<td>Breathlessness clinics ↔</td>
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<tr>
<td></td>
<td>Inhaled furosemide ↔</td>
<td></td>
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<td></td>
<td>Heliox ↔</td>
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↑ Evidence generally supports use of intervention for the management of refractory dyspnea in COPD.
↓ Current available evidence does not support use of this intervention.
↔ Further investigation required.
Drugs for symptom control in end stage COPD

**Opiates**

- Useful in reducing the sensation of breathlessness
- Initially prescribe oral morphine
- This can lead on to a regular longer acting opiate

**Benzodiazepines**

- Can be prescribed alone or alongside opiates
  - Lorazepam can be used sublingually as required at dose of 0.5-1 mg
  - Patients with persistent anxiety or breathlessness may require a regular longer acting benzodiazepine such as diazepam 2-5 mg every 8 hours
Palliation of dyspnoea in advanced COPD:
revisiting a role for opioids

G Rocker, R Horton, D Currow, D Goodridge, J Young and S Booth

Thorax 2009; 64; 910-915
The dyspnoea ladder for advanced COPD.
Oxygen

- Both oxygen and normal air reduce dyspnoea
- No evidence for a consistent beneficial effect individual test, but stop if no beneficial effect

**Adverse effects:**
- Dry airways
- Dependency
- No adaptation to low oxygen level
- Difficult discharge home
- Financial issues
Oxygen

Home oxygen therapy is commonly prescribed for patients with severe COPD

- Two randomized controlled trials demonstrated (1980/81) that long term oxygen therapy (LTOT) prolongs survival in COPD patients with hypoxemia (PaO2 <55 mmHg). LTOT oxygen is administered at home for at least 12–15 hours per day.
Oxygen

In patients with end stage disease, oxygen is used to provide symptomatic relief of breathlessness.

- Oxygen can be administered for long periods during the day and night (long term oxygen therapy) or as short burst therapy to relieve symptoms.
NPPV in palliative care

Non invasive positive pressure ventilation

NPPV is alternative to invasive ventilation for symptom relief in end stage COPD

The goals of using NPPV and the parameters for success and failure, should be discussed by experienced personnel, in appropriate healthcare settings
Killing the symptom without killing the patient

Do opioids cause respiratory depression, especially in patients with cardiopulmonary disease?

Do opioids shorten life when required to treat severe symptoms?

*Canadian Family Physician*

*Vol 56: June • juin 2010*
Killing the symptom without killing the patient

Respiratory depression is defined as a rise in peripheral PCO2 and a fall in peripheral oxygen, as well as a reduction in the rate of respiration. It is always preceded by sedation, and the process of sedation through to reduction and cessation of breathing takes at least 5 to 15 minutes.

- Studies show that appropriate doses of opioids do not cause respiratory depression.
Killing the symptom without killing the patient

Studies of the relationships between opioids dose, change of dose, and use of sedatives and time to death in patients with advanced illness have found no significant relationships.
Old model of care

- Disease modifying therapy
  - Diagnosis
  - Treatable
  - Death
- Palliative care
- Hospice
New models of care

- Ongoing communication (advance care planning, meaning-centered care) and coordination
- Therapies for refractory dyspnea (pharmacologic and behavioral)
- Pulmonary rehab (outpatient and at home)

Supportive palliative treatment
Disease modifying treatment