The Palliation of Dyspnea in Chronic Obstructive Pulmonary Disease

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Objectives

- By the end of the talk the learner will be able to:
  1) Define COPD
  2) Describe the COPD Disease Trajectory
  3) List Treatment options for the palliation of COPD
  4) List Barriers to palliation in COPD

The essence of a breath is filled with physiological, psychological and spiritual signals
Dyspnea - Definition

- “Labored or Difficult Breathing”
- “An Uncomfortable Awareness of Breathing”
- Is subjective in nature and requires patient be alert to experience

Case study

- Mr. J.D. is 87 years old from rural Manitoba with COPD
- Long time smoker – smokes 2 packs per day for 60 years
- Increasingly dyspneic over last 2 years

What is Chronic Obstructive Pulmonary Disease (COPD)?

- OBSTRUCTION to Airflow
  - Airway collapse
  - Bronchospasm
  - Mucosal inflammation
  - Edema
- Leads to air-trapping and hyperinflation

What is COPD?

- Chronic Bronchitis
  - Cough productive of sputum for 3 months of 2 consecutive years
- Emphysema
  - Destruction of airspaces distal to the terminal bronchus
Incidence

- 4th leading cause of death in Canada
- By 2020:
  - 3rd leading cause of death
  - 5th leading cause of disability
- Increased by 53% from 1988-1999 in women and is still rising
- 98% of patients with COPD experience dyspnea at EOL

Sullivan, Chest 2000
Michaud, JAMA 2001
Murray, Lancet, 1997

Natural History

(Uronis, International J of COPD, 2006)
Why Dyspnea in COPD?

(Mahler, Curr Opin Supp Pall Care, 2011)

Comparing Lung Cancer & COPD
(The Psychological Impact of Dyspnea)

(Mahler, Curr Opin Supp Pall Care, 2011)

Case Study

- Mr. D. has 8 hospitalizations for AECOPD/pneumonia
- He is on maximal doses of inhalers
- He is on continuous oxygen
- His mood declines, his anxiety increases
- He refuses to go to his granddaughter’s wedding because of embarrassment
- How does his mental health compare to patients with lung cancer?

Table 2: Depression subscale of Health Anxiety and Depression Scale (HADS) for the two groups

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>10.18 (3.9)</td>
<td>3–21</td>
</tr>
<tr>
<td>NSCLC</td>
<td>7.22 (5.14)</td>
<td>0–20</td>
</tr>
</tbody>
</table>

Scale 0–21: 0–10 indicative of clinical depression.

Table 3: Anxiety subscale of the Hospital Anxiety and Depression Scale for the two groups

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>11.44 (4.76)</td>
<td>1–20</td>
</tr>
<tr>
<td>NSCLC</td>
<td>7.35 (5.27)</td>
<td>0–21</td>
</tr>
</tbody>
</table>

Scale 0–21: 0–10 indicative of clinical anxiety.

(Gore, Thorax, 2000)
Comparing Lung Cancer & COPD
(Pall. Med, Edmonds 2001)

<table>
<thead>
<tr>
<th>Symptoms Final Year of Life</th>
<th>Chronic Lung Disease</th>
<th>Lung Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All (%)</td>
<td>Severe (%)</td>
</tr>
<tr>
<td>Pain</td>
<td>77</td>
<td>56</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>94</td>
<td>76</td>
</tr>
<tr>
<td>Cough</td>
<td>59</td>
<td>46</td>
</tr>
<tr>
<td>Anorexia</td>
<td>67</td>
<td>15</td>
</tr>
<tr>
<td>Constipation</td>
<td>44</td>
<td>25</td>
</tr>
<tr>
<td>Insomnia</td>
<td>65</td>
<td>42</td>
</tr>
<tr>
<td>Low Mood</td>
<td>71</td>
<td>57</td>
</tr>
</tbody>
</table>

The Basic Approach to Dyspnea

(Kamal, J of Pall Med 2011)
Palliative Approach to Dyspnea

General Approach to COPD

Non Pharmacologic Relief of Dyspnea in COPD

Walking aids
Neuroelectric muscle stimulation
Chest Wall vibration

All shown to be effective non-pharmacologic modalities to relieve dyspnea in COPD


Canadian Thoracic Society Recommendations, 2003
Approach to Other Comorbidities Causing Dyspnea

- Largely depends on suspected pathology
- Important to go formulate a DDx even if pt palliative
- Treatment options can then be tailored according to prognosis and goals of care

Specific Treatments For Comorbidities Causing Dyspnea

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemia</td>
<td>Transfusion</td>
</tr>
<tr>
<td>Cachexia</td>
<td>Steroids/Progesterones</td>
</tr>
<tr>
<td>Pulmonary Emboli</td>
<td>Anticoagulation</td>
</tr>
<tr>
<td>Infections</td>
<td>Antibiotics</td>
</tr>
<tr>
<td>Effusions/Ascites</td>
<td>Drainage</td>
</tr>
</tbody>
</table>

Case Study

- Mr. D. develop shingles which breakout across half of his face
- He describes the pain as “someone is taking a blow torch to my head”
- His doctor struggles to manage his pain, not wanting to put him on opioids
- Palliative care/Pain service never consulted
Case Study

What is the truth about opioids in the palliation of COPD?

Palliation of Dyspnea in COPD

Opioids

Still controversial but opinions changing over last decade 😊

Narcotics. Narcotics are contraindicated in COPD because of their respiratory depressant effects and potential to worsen hypercapnia. 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 (138–142). Codeine and other narcotic analgesics should also be avoided.

(Golden Strategy for the Diagnosis, Management and Prevention of COPD - “GOLD” recommendations
Am J Resp Crit Care Med, 2001)

Opioids in COPD – Early 2000’s

- Improvement in dyspnea and sleep over placebo with SR Morphine
  (Abernethy, BMJ 2003)

- 2 systematic reviews:
  - 18 double-blind, randomized, controlled trials, showed significant relief of dyspnea with oral or parenteral opioids
  (Tomas, Curr Opin Pulm Med, 2004)

Opioids in COPD – Later 2000’s

- Reduction in breathlessness with oral or parenteral opioids. Better than oxygen in reducing dyspnea
  (Clemens, Supp Care Cancer, 2009)

- Reduce work of breathing but do not affect ventilation, or increase CO2
  (Clemens, J Pall Med, 2008)

- Opioids do not shorten life
  (Portenoy, J Pain Symp Mange, 2006)
The Evolution of the Palliation of COPD Continues…

Anxiolytics are used in Cancer Dyspnea – What about COPD?

Respiratory Rate decreased with opioid and anxiolytic without an increase in PaCO2 in Cancer Patients (Clemens, Supp Care Cancer 2011)

Midazolam improves dyspnea above morphine alone in terminally ill cancer patients (Navigante, J Pain and Sympt Management, 2006)

Anxiolytics for Dyspnea in COPD – Current Literature

- Benzodiazepines
  - 4 small studies in COPD – conflicting reports

- SSRI’s and Tricyclic Antidepressants
  - Did not improve dyspnea in 43 studies of COPD when used for psychiatric symptoms

Palliation of Dyspnea in COPD With Oxygen

Summary of evidence in patients with COPD

1. There is evidence for and against using oxygen for palliation of breathlessness at rest.
2. The majority of studies using oxygen during exercise show that patients experience less breathlessness at equivalent level of exercise when compared to air.
3. There is no evidence that pre-oxygenation reduces breathlessness during exercise.
4. There is recent evidence that using oxygen may speed recovery from breathlessness, given before or after exercise.
5. A recent study suggests that the effect of ambulatory oxygen on quality of life over a longer-term cannot be predicted from patients’ baseline characteristics or their acute/short-term response to oxygen therapy. Even when they experienced acute/short-term response to oxygen therapy, a significant proportion of patients would not benefit from receiving the continuous oxygen at home because of poor tolerability.

(Expert Working Group of the scientific committee of palliative medicine, 2004)
Summary of Evidence - COPD

<table>
<thead>
<tr>
<th>Oxygen</th>
<th>Pharmacologics</th>
<th>Non-pharmacologics</th>
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</table>

- Anxiolytics & Antidepressants not routinely used for dyspnea (2B)
- Oral opioids be used for dyspnea in advanced COPD (2C)
- NMES and chest wall vibration are helpful (2B)
- Walking aids are helpful (2B)
- Pursed-lip breathing may be helpful & should be taught (2B)
- Continuous oxygen for hypoxemic patients reduced mortality and may reduce dyspnea (2B)

Grade 2 = weak recommendations
B = randomized trials with limitations
C = observational studies

(Uronis, International J of COPD, 2006)

2011 Canadian Thoracic Society (CTS) Recommendations for Dyspnea in COPD

- Anxiolytics & Antidepressants not routinely used for dyspnea (2B)
- Oral opioids be used for dyspnea in advanced COPD (2C)
- NMES and chest wall vibration are helpful (2B)
- Walking aids are helpful (2B)
- Pursed-lip breathing may be helpful & should be taught (2B)
- Continuous oxygen for hypoxemic patients reduced mortality and may reduce dyspnea (2B)

Case Study

- Mr. D. dies “suddenly” in hospital 2 weeks later, family surprised but relieved
- How commonly is prognosis not discussed with COPD patients/family?

Comparing Lung Cancer & COPD at Time of Hospice Referral

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>M/F (%)</th>
<th>FEV1</th>
<th>KPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD</td>
<td>70.5</td>
<td>44/56</td>
<td>0.52</td>
<td>62.5</td>
</tr>
<tr>
<td>NSCLC</td>
<td>71.4</td>
<td>72/28</td>
<td>1.47</td>
<td>66.9</td>
</tr>
</tbody>
</table>

P<0.0001
P<0.05

(Gore, Thorax, 2000)
Comparing Lung Cancer & COPD

<table>
<thead>
<tr>
<th>Knowledge of Death</th>
<th>COPD (%)</th>
<th>Lung Cancer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient knew might die</td>
<td>62</td>
<td>76</td>
</tr>
<tr>
<td>Patient told by Doctor</td>
<td>16</td>
<td>36</td>
</tr>
<tr>
<td>Family told by Doctor</td>
<td>31</td>
<td>62</td>
</tr>
<tr>
<td>Patient knew at least 1 month before death</td>
<td>38</td>
<td>58</td>
</tr>
</tbody>
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(Pall. Med. Edmunds, 2001)

Case Study

Why do you think palliative care was never consulted for Mr. D.?

Patient Barriers to Palliative Care

- Would rather concentrate on staying alive
- Not sure which doctor will take care of me
- I don’t know what kind of care I want
- I don’t like to talk about getting very sick
- My ideas about care change at different times
- Doctors look down on me because of smoking
- I am not ready to talk about it
- My doctor doesn’t want to talk about it

(Chest, 2005) (Patel, 2012)

Physician Barriers to Palliative Care

- Too little time in our appointments
- Don’t want to take away hope
- Patient is not ready to talk about it
- Patient has not been very sick yet
- Patient doesn’t know what kind of care they want
- Patient ideas about care change over time
- My role as a doctor is to make pt feel better

(Chest, 2005) (Patel, 2012)
Palliative Care Discussion Starters

- If things got worse, where would you like to be cared for?
- What’s the most important issue in your life right now?
- What helps you keep going?
- What is your greatest problem?
- You seem cheerful at present, but do you ever feel down?

Summary

- COPD can be very symptomatic and is becoming more prevalent
- Evidence support palliative management with opioids in end stage COPD
- Still many barriers to palliative care in COPD