“Respiratory Issues at End-of-Life”
Jerry Boltz, FNP
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Module 3:
Nonpain Symptoms at the End of Life

Part I

Common Respiratory Issues Near the End of Life

• Dyspnea
• Cough
• Changes in respiratory rate & rhythm
• Increased Respiratory secretions

Dyspnea: Definition

• Distressing shortness of breath, air hunger, or difficulty breathing
• Associated with anxiety, depression, and decreased quality of life
• Can be acute or chronic
• Sometimes occurs or worsens only with activity

Dyspnea: A subjective Feeling

• Dyspnea refers to the sensation of difficult or uncomfortable breathing. It is a subjective experience perceived and reported by an affected patient.
## Dyspnea
### Major Pulmonary Causes
- Tumor Infiltration
- Pleural Effusion
- Aspiration
- COPD
- Pneumonia
- Bronchospasm
- Pulmonary Embolism
- Pulmonary Fibrosis
- Superior Vena Cava Syndrome
- Thick Secretions caused by infectious diseases or dehydration...
- Thick secretions caused by us? Later

### Major Cardiac Causes
- Congestive Heart Failure
- Pulmonary edema
- Pulmonary Hypertension
- Pericardial Effusion
- Cardiac disease - arrhythmias

### Cancer Related Causes
- Metastatic disease from any primary site
- Obstruction of Bronchus
- Malignant Ascites
- Anemia (Anemia of chronic disease)
- Superior Vena cava Syndrome
- Pneumonectomy

### Major Neuromuscular Causes
- Amyotrophic Lateral Sclerosis (ALS)
- Muscular dystrophy
- Myasthenia Gravis
- Cerebrovascular Disease
- Trauma as a result of physical injury

### Other causes
- Anorexia
- Cachexia
- Hyperventilation
- Anxiety
- Uncontrolled Pain
- Hyperthyroid
- Obesity
- Spiritual issues

### Assessment of Dyspnea
- Subjective report
- Clinical assessment
  - Physical exam
  - Diagnostic tests

*Derby et al., 2010; Dudgeon, 2010*
Dyspnea Assessment

Subjective
- Dyspnea Assessment Is like a Pain Assessment. The subjective report of the patient is the only reliable indicator of this symptom.
- The patient’s respiratory rate & Oxygenation status *Do Not* always correlate with the symptom of breathlessness.

Subjective Report
- Impact on Function & Quality of Life
  - Ability to sleep
  - Ability to perform ADL’s (get dressed, talk, eat, sleep, etc.)
- The patient may report breathlessness in spite of good oxygenation status or limited disease state.

Clinical Assessment of Dyspnea
- Determine history of:
  - Acute or chronic dyspnea
  - Smoking
  - Heart Disease or Lung Disease
  - Concurrent Medical Conditions

Clinical Assessment of Dyspnea
- Physical Examination
  - Elevated Jugular Pressure
  - Lung Sounds
  - Respiratory Rate, Depth
  - Use of Accessory Muscles
  - Peripheral Edema

Non-Pharmacologic Treatments for Dyspnea
- Education, Education, Education
- Pursed lip breathing
- Energy conservation
- Fans, elevating head of the bed
- Prayer, Music
- Calm environment
  
  *Dudgeon, 2010*

Other Non-Pharmacologic Treatments for Dyspnea
- Transfusion of PRBC’s
- Thoracentesis
- Paracentesis
- Radiation therapy to shrink tumor
- Stent tube placement to open an occluded airway
Oxygen Therapy for Dyspnea

- Effectiveness has not been established by research
- Worth trying especially if oxygen saturation is low
- Trial O₂ 2-6 L per nasal prongs; reassess 2 hours after each change in liter flow

Derby et al., 2010; Dudgeon, 2010; Gallagher & Roberts, 2004; Pan, 2003

Pharmacologic Treatment of Dyspnea

- Opioids
- Bronchodilators
- Diuretics
- Other

Clemens & Klaschik, 2007; Derby et al., 2010; Dudgeon, 2010; Jacobs, 2003

Opioids for Dyspnea

- Can be administered by oral, subcutaneous, sublingual, or intravenous routes
- Studies show that Opioids have a small, but positive effect on reducing dyspnea
- Significant respiratory depression is uncommon
- Nebulized opioids are no more effective than opioids given by other routes

How do Opioids work for Dyspnea?

Possible Mechanisms
- They interrupt the neural pathways that give rise to the sensation of dyspnea
- They have a sedative & anxiolytic effect to relieve the discomfort of dyspnea
- Vasodilatation – Reduce Preload

What Opioids do not do

- Opioids do not relax the respiratory muscles, allowing the patient to breathe easier.
- This explanation could be easily misconstrued by patients and families.

Is there a role for Anxiolytics in Dyspnea?

- Sedation and reduction of anxiety are “side effects” of Opioids. Like all side effects, (except for constipation), These side effects may disappear over time.
- If an anxiety component is identified, anxiolytics may be helpful.
**Bronchodilators**

- Albuterol (relaxes bronchial smooth muscle by action on the Beta-2 receptors).
- Atrovent (Anti-cholinergic agent that causes bronchodilation)
- Given by SVN is more effective than if given by metered dose inhalers.

**Diuretics**

- Reduce pre-load on the heart
- May reduce the sensation of dyspnea that may be caused by congestive heart failure.

**Other Pharmacologic treatments**

- Chlorpromazine (Thorazine) – There is some evidence that low doses of Chlorpromazine (25mg q 4 hours) may relieve the symptoms of dyspnea.
- Antibiotics – Pneumonia
- Steroids – Reduce inflammation

**Cough**

- Cough is:
  - A Common Symptom in advanced disease
  - Cough causes:
    - Pain, Fatigue, Insomnia

  Dudgeon, 2010

**Some Causes of Cough**

- Post Nasal Drip
- Asthma
- Bronchitis
- Obstruction
- Pleural effusion
- P.E.
- Pneumothorax
- Allergens
- Cigarette Smoking
- Environmental irritants
- Medications (ACE Inhibitors)

**Assess the Type of Cough**

- Acute Cough – Often caused by:
  - Allergens, Environmental irritants, Post-Nasal drip, GERD, Lung lesions, TB, Pneumonia, Foreign Body
- Chronic Cough: Allergens, Chronic diseases (COPD, Bronchitis, Airway Inflammation)
- Nocturnal: GERD, Asthma, CHF
Treatment Decisions

• Patient’s condition – Where are they on the trajectory of their illness.
• Does the patient have a strong or a weak cough?
• Suppress by night – Expectorate by day
• Do we really want to dry it up?

Pharmacologic Interventions for Cough

• Suppressants/Anesthetics
• Expectorants
• Antibiotics
• Steroids
• Anticholinergics

Lingerfelt et al., 2007

Cough Suppressants

• Opiates
  – Morphine Sulfate
  – Codeine – Metabolized to Morphine
  – Hydrocodone & Homatropine
  – Opioids in general - Bind to opiate receptors & suppress cough in the medullary center

Cough Suppressants

• Non-Opioid
  – Dextromethorphan – Structurally related to Codeine, Depresses Medullary cough center.
  – Benzonatate (Tessalon Perles) Suppresses cough by topical anesthetic action on the respiratory stretch receptors

Non-Pharmacologic Interventions for Cough

• Chest PT
• Humidifier
• Positioning

Changes in Respiratory Rate and Rhythm

• Education, Education, Education
• Autonomic Nervous System -
• “Normal” Respiratory rate 12 – 20 breaths per minute.
• The term “Normal” changes depending on where the patient is at on their “Journey”
“They are Breathing So Fast!!

- Kussmaul Breathing – Deep Rapid respirations – Acidosis – Blowing off Carbon Dioxide. Body is trying to maintain acid / base balance…

Some Things to Think About When the Patient’s Respiratory Rate is Fast and “labored”

- Do we need to slow down the patient’s respiratory rate?
- How much Morphine (Opioid) does it take to slow down a person’s respiratory rate?
- Who are we treating when we try to slow down the respiratory rate?

Other “End of Life” Breathing Patterns

- Apnea
- Cheyne Stokes Breathing
- Guppy Breathing

“Death Rattle”

- “Death Rattle” – Now that is an uncomfortable couple of words!
- “Increased Respiratory Secretions”
  - Why is the terminology problematic?
  - Who are treating?

Non-Pharmacologic “Treatments”

- Education, Education, Education
  - Tell family members what to expect
  - Ask them not to feed their loved ones unless they are wide awake, and able to swallow.
- Patient Positioning

Pharmacologic Treatments

- Scopolamine Patch – Crosses the blood brain barrier - “Mad as a Hatter”.
- Glycopyrrolate
- Atropine drops
- Hyoscine
Just a Thought

• Asking for Refills on these medications should be a rare event.

Key Nursing Roles

• # 1 Patient Advocacy

  • “We all believe in patient determined end of life care...As long as they agree with our plan”
    Charles von Gunten, M.D.

• Patient/Family Teaching
• Assessment
• Pharmacologic treatments
• Non-pharmacologic treatments
• Presence