Hospice Medical Director Course

Module A

Symptom Management II:
Dyspnea, Seizures, Anorexia

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Dyspnea
**Basics**

- **American Thoracic Society consensus statement definition**
  
  “a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity”,

Not necessarily related to hypercapnia or hypoxia
Basics

- 70% - 80% of cancer patients during the last six weeks of life
- 50-70% of patients dying from other causes
- In one study, physicians consistently underrated symptoms of dyspnea

Mechanisms

- **Chemoreceptors**
  - Stimulated by low PO2 and high PCO2 levels
  - Effect of PCO2 mediated through changes in pH
- **Mechanoreceptors**
  - Located in upper airway, lungs, chest wall and respiratory muscles
- **Upper-airway and facial receptors**
  - Dyspnea scores improve with inhalation of cold air
  - Decrease of dyspnea intensity when sitting near fan or open window
Mechanisms

■ Lung receptors
  ■ Stretch receptors-respond to lung inflation
  ■ Irritant receptors-affect bronchoconstriction
  ■ J receptors-respond to interstitial congestion

■ Chest wall receptors-from joints, tendons and muscles of the chest wall

■ Afferent mismatch-difference in the ventilatory pattern and afferent feedback
Case Presentation

53 yo woman recently diagnosed with metastatic lung cancer.

- Initially had occasional chest pain
- Subsequently developed dyspnea at rest, worse with exertion
- Became hypoxic (RA sat 80%)
The O2 Saturation monitor is the best modality to objectively validate dyspnea.

- True
- False
Dyspnea

- The only reliable measure is patient self-report
- Respiratory rate, pulmonary function tests, oxygen saturation and arterial blood gases *do not* correlate with the feeling of dyspnea
- Dyspnea significantly diminishes quality of life
Dyspnea and Quality of Life

FIG. 1. Median of interference in different daily living activities according to the severity of dyspnea defined by the Edmonton Symptom Assessment System (ESAS) score.

Evaluation: Common Causes

- Airway Obstruction
- Bronchospasm
- Hypoxemia
- Pleural Effusion
- Pneumonia
- CHF
- Arrhythmia
- COPD Exacerbation
- Pericardial Effusion
- Radiation Pneumonitis
- Pulmonary Embolism
- Thick Secretions
- Anemia
- Metabolic
- Anxiety
- Ascites
- SVC Syndrome
- Carcinomatous Lymphangitis
- Pneumothorax
- Motor Neuron Disease
Non-Drug Treatment of Dyspnea

- **Environment**
  - Cool humidified air
  - Circulating fan or open window
  - Limit number of people in room

- **Positioning**
  - Sit up or lean forward over bedside table
  - Pursed lip breathing

- **Reassurance**
  - Calming, relaxation techniques
  - Breathing exercises
Oxygen

- Pulse oximetry not helpful in predicting clinical response because dyspnea is often NOT related to oxygenation.

- Evidence for use of oxygen therapy (compared to room air) is mixed
  - Efficacy may be from air flow stimulation of facial nerves
  - Try a fan or open a window

- Potent symbol of medical care
  - Good and bad

- Expensive
Case Study: Hypoxia

72yo female dx of Lung CA 8mos previous, no improvement with chemotherapy. PPS 60% taking PO well. Recurrent CA related sweats. Sent home on “pain patches” given her from the Cancer Institute. Fear of Resp. depression given for refusing PO med. Pain poorly controlled despite increase in “patch” Hypoxic crisis with MS changes over weekend.
Question: Nebulized Morphine is current standard of care for lung cancer related breathlessness?

- 1. Yes, current standard of care however its use is underutilized by the medical community
- 2. No, its use is not standard of care and it should not be considered or offered
- 3. Meta-analysis of current literature showed no additional benefit of nebulized morphine
Opioids

- Relief not related to respiratory rate
- There should be no ethical or clinical barriers to their use for dyspnea
- Dosing is similar to pain management
  - Morphine is most studied (short and long acting)
  - Hydrocodone, codeine, oxycodone, hydromorphone and fentanyl have all been used successfully
  - May be nebulized
- Central and peripheral action
  - Depression of opioid receptors (lungs, CNS)
  - Decrease ventilatory response
  - Venodilation of pulmonary vessels
  - Diminish anxiety
Opioids and Respiratory Depression

- Respiratory rate is decreased with opioids, however, there is no demonstrable impact on gas exchange.
- With opioids, dead space ventilation decreases and tidal volume increases with unchanged alveolar ventilation.
- Therefore, opioids “economizes” breathing.

Clemens KE et al. Is there a higher risk of respiratory depression in opioid-naïve palliative care patients during symptomatic therapy of dyspnea with strong opioids? JPM 2008;11:204-216.
Anxiolytics

- Data is mixed with some trials showing no benefit and others showing significant improvement in dyspnea
- Should not be used as first-line therapy for dyspnea
- May be used as an adjunct for patients for whom anxiety is a prominent factor
Anxiolytics

- For longer term treatment consider SSRI agents with prn anxiolytic
- Midazolam IV 0.25-0.5mg IV/SQ/SL
- Lorazepam
  - 0.5-2 mg po q 1 h prn until settled then dose routinely q 4–6 h to keep settled
  - SL well absorbed
Anxiolytics (Cont.)

- Diazepam
  - 5-10 mg po every 4-6 hours, many active metabolites, not drug of choice for longer term use. Clonazepam has longer t1/2 .25-2mg
  - q8-12
  - IV 1-2 mg/dose, may consider continuous short term infusion
Secretion Management

- Strong cough:
  - Percussion, lateral decub positioning, activity
  - Loosen with saline/hypertonic nebulizer
  - Sodium bicarb +/- mucomyst may loosen thickened secretions; may add albuterol if bronchoconstriction identified
  - Guaifenesin: mild mucolytic, no solid evidence base. Watch for nausea
Secretion Management

- Weak cough (death rattle):
  - Transdermal Scopolamine Patch Q 72 hr
  - Atropine 0.5% 1-4 gtts po/sl qid
    - Both are tertiary amines which cross BBB
  - Glycopyrrolate (Robinul) 0.4 mg SC Q 4 hr
  - Hyoscyamine (Levsin SL) 0.125 mg q 4-6 hr
    - Both are quaternary amines which do not cross BBB
  - Avoid suctioning unless it is effective and tolerated
Seizures
Question: When should I be worried about seizure activity?

- Never, a seizure is just the brain ‘resetting’ and is self limited
- Only worry that the patient may injure themselves, remove furniture and objects from around the seizing patient
- Prolonged or Status seizures may cause neuronal damage and education is needed for patient caregivers
Seizures

- Seizure and acute, massive hemorrhage are two of the most frightening symptoms that families encounter.

- Patients at higher risk:
  - Prior seizure – stopping medications
  - Brain involvement with cancer especially parietal, temporal or frontal lobe involvement

- Educate the family, caregivers, volunteers

- Consider providing a “seizure” emergency kit
Seizures: Caregiver Education

Do:
- Remain calm, most seizures are self-limited
- Remove hard or sharp objects from the vicinity

Do not:
- Force open the patient’s mouth
- Use tongue depressor
- Attempt to restrain patient
Seizures: Education

- The patient may become incontinent but they rarely hurt themselves

- Postictal lethargy is common
  - Do not attempt to move or feed patient for 30-60 minutes (or until alert and active) after the seizure (increased risk for aspiration events)
  - Expect the patient to sleep following seizure
Seizures: Treatable Causes

- Brain metastases:
  - XRT, dexamethasone

- Hyponatremia:
  - Fluid restriction, alter diuretics, IV NS

- Hypoglycemia
  - Oral glucose (juice, candy, etc.), adjust medications
    - (cont. next slide)
Seizures: Treatable Causes

- Hypoxemia
  - Oxygen
- Withdrawal syndrome
  - Usual support
Seizures: Prophylaxis

- No longer routine in primary or metastatic brain disease in absence of seizure history
- American Academy of Neurology recommendations for patients with brain tumors with no history of seizures is to discontinue or taper anti-epileptic drugs after the first post-operative week
Seizures: Prophylaxis

- **Anticonvulsants**
  - Phenytoin (Dilantin) 100 mg TID or 300 mg HS, and as serum levels dictate
  - Valproate 250-500 mg PO or IV tid
  - Phenobarbital 65 mg PO or SQ BID-TID
  - Levetiracetam 500 mg PO q12 (favorable side effect profile)
Seizures: Acute Management

- Focal Seizures can often be treated with oral/sl medication,
- Generalized seizures will require parenteral/rectal administration
  - Diazepam (Diastat Rectal gel) 10-20mg PR
  - Buccal Midazolam considered equivalent to rectal diazepam in some studies (5mg=1cc q2min)
  - Lorazepam (Ativan)
    - 5-10 mg IM,
    - 4mg PR repeat q5-10 min prn
    - 1-2 mg IV, q3-4 min prn max 30 mg
Seizures: Post-Acute Management

- Oral loading if possible
- If IV access is available, load with:
  - Fosphenytoin (Cerebyx), Valproate, Phenytoin (Dilantin) or Phenobarbital
- Rectal valproic acid, phenobarbital or carbamazepine
- IM fosphenytoin or phenobarbital alternate
  - Fosphenytoin (Cerebyx), Valproate, Phenytoin (Dilantin) or Phenobarbital
Anorexia
The anorexia/cachexia syndrome can usually be resolved by scheduling oral nutrition supplements and/or IV/naso-gastric feedings

- True
- False
Anorexia - Cachexia

- Survey data show that anorexia/cachexia and fatigue cause more suffering than pain or dyspnea.
- Characterized by insufficient intake (calories and protein) and hypercatabolism.
- Salient feature is systemic inflammation which lead to muscle loss with or without loss of fat mass.
Diagnostic Criteria of Cachexia

- Unintentional weight loss (>5%)
- BMI <20 in those aged <65 yrs and <22 in those aged 65 or older
- Albumin <3.5 g/dL
- Low fat-free mass (lowest 10%)
- Evidence of cytokine excess (elevated CRP)
- Increased resting energy expenditure
- Resistance to re-feeding
Metabolic Abnormalities in Cachexia

- Increased protein catabolism
- Decreased protein synthesis
- Impaired lipoprotein lipase
- Increased lipolysis from adipose
- Decreased fat synthesis
- Decreased total lipids
Factors in Anorexia/Cachexia

- Psychosocial factors
  - Poverty
  - Inadequate caregiver
- Psychiatric factors
  - Depression
  - Dementia
- Mechanical factors
  - Poor oral health
  - Obstruction
- Symptom factors
  - Pain
  - Nausea/vomiting
  - Dyspnea
## Anorexia-Reversible Causes

- **A**: aches & pains
- **N**: nausea
- **O**: oral candidiasis
- **R**: reactive depression
- **E**: evacuation (constipation)
- **X**: xerostomia
- **I**: iatrogenic (XRT, chemo, drugs)
- **A**: acid-related problems
General Management

- Assess and manage comorbid conditions
- Educate and support
  - Many caregivers view the patient’s not eating as a sign of giving up “if they would eat they would get better”
  - Educate that this is part of the disease process it is not voluntary
  - Don’t let meal time become an emotional battleground
  - ‘I show my love by making you food, you show your love by eating it’
Offering Foods

- Favorite foods (small servings) high calories, make it count

- Nutritional supplements
  - Powdered milk mixed in anything significantly boosts the protein content
  - Carnation instant breakfast

- Tastes can change, so try some new things

- Generally avoid very spicy foods, some spicy foods will work well due to decrease in taste
## Pharmacologic Treatment

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<th>Proven Therapies</th>
<th>Megestrol Acetate: 480-800 mg daily</th>
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<tr>
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<td>Steroids: Dexamethasone 4-8 mg daily</td>
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<td>Prednisone 20-40 mg daily</td>
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<td>Metoclopramide: 10 mg tid ac and hs</td>
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<td>Therapies with Limited Benefit</td>
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Questions?