Hospice Pharmacotherapy 101: Cardio-Pulmonary Symptom Management

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Clinical Pharmacist

Disclosure

- I have no relevant financial relationships with manufacturers of any commercial products and/or providers of commercial services discussed in this presentation.
- This discussion will include the use of medications for off-label indications.
Objectives

- Review pathophysiology and assessment of common cardio-pulmonary symptoms in end of life.
- Discuss treatment options for common cardio-pulmonary symptoms in end of life.
- Develop a plan for addressing cardio-pulmonary symptoms based on clinical presentation and patient-specific goals of care.

Dyspnea
Dyspnea

- Dyspnea:
  - Dyspnea is a distressing, subjective, breathing discomfort
  - Described as:
    - shortness of breath
    - air hunger
    - increased effort to breath
    - chests tightness
    - rapid breathing
    - feeling of suffocation
  - Approximately 70% of hospice patients will experience dyspnea\(^2\)

- Goal of Therapy:
  - To decrease the patient's perception of breathlessness

Dyspnea

- Clinical Characteristics:
  - Abnormal breathing may not be uncomfortable, and uncomfortable breathing may not be abnormal
  - Respiratory rate, blood gas levels, pulmonary function tests do not correlate well with patients breathing perception
  - Self reporting is essential

- Impact:
  - Decreased activities
  - Anxiety
  - Family perception
Dyspnea

• Causes:
  – Non-reversible:
    • Airways obstruction: COPD, tumor
    • Cardiac: Heart failure, pulmonary hypertension
    • Muscle weakness: Amyotrophic Lateral Sclerosis, cachexia
  – Reversible:
    • Anxiety
    • Bronchospasms
    • Fluid in respiratory tract
    • Abdominal pressure
    • Cough
    • Pain

• Goal of therapy:
  – Decrease the perception of dyspnea
• Non-Pharmacological therapy
  – Deep, slow breathing into a paper bag
  – Improve circulation and air quality
  – Reposition for comfort
  – Relaxation
  – Minimize triggers
  – Companionship
Pulmonary Disease

COPD

- Chronic Obstructive Pulmonary Disease (COPD)
  - Obstructed airflow from the lungs
  - Symptoms
    - Breathing difficulty
    - Cough
    - Mucus (sputum) production
    - Wheezing
    - Frequent respiratory infections
    - Fatigue
COPD

• Chronic Obstructive Pulmonary Disease (COPD)
  – Chronic bronchitis
    • Inflammation of the lining of the bronchial tubes, which carry air to and from the air sacs (alveoli) of the lungs
  – Emphysema
    • Alveoli at the end of the smallest air passages (bronchioles) of the lungs are destroyed as a result of damaging exposure to cigarette smoke and other irritating gases and particulate matter

COPD

• Non-Pharmacological Therapy
  – Smoking cessation
  – Supplemental oxygen
  – Pulmonary rehabilitation
• Pharmacological Therapy
  – Bronchodilators
    • Relax smooth muscle around airways
  – Anticholinergics
    • Prevent muscles around airways from tightening
  – Anti-inflammatories
    • Decreasing inflammation leads to less swelling and mucus production in the airways

COPD- Pharmacological Therapy

<table>
<thead>
<tr>
<th>Generic (Trade Name)</th>
<th>Adult Starting Dose</th>
<th>Routes of Administration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albuterol (AccuNeb®)</td>
<td>2.5mg Q4H PRN</td>
<td>Inhalation via nebulizer or meter dose inhaler (MDI)</td>
<td>Short acting beta-agonist</td>
</tr>
<tr>
<td>Levalbuterol (Xopenex®)</td>
<td>0.63mg Q6H PRN</td>
<td>Inhalation via nebulizer or MDI</td>
<td>Short acting beta-agonist</td>
</tr>
<tr>
<td>Arformoterol (Brovana®)</td>
<td>15mcg BID</td>
<td>Inhalation via nebulizer</td>
<td>Long acting beta-agonist</td>
</tr>
<tr>
<td>Formoterol (Perforomist®)</td>
<td>20mcg BID</td>
<td>Inhalation via nebulizer</td>
<td>Long acting beta-agonist</td>
</tr>
<tr>
<td>Salmeterol (Serevent®)</td>
<td>50mcg BID</td>
<td>Inhalation via dry powder inhaler</td>
<td>Long acting beta-agonist</td>
</tr>
<tr>
<td>Generic (Trade Name)</td>
<td>Adult Starting Dose</td>
<td>Routes of Administration</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------------------</td>
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<td>---------------------------------</td>
</tr>
<tr>
<td>Ipratropium (Atrovent®)</td>
<td>500mcg Q6-8H</td>
<td>Inhalation via nebulizer or MDI</td>
<td>Short acting anticholinergic</td>
</tr>
<tr>
<td>Tiotropium (Spiriva®)</td>
<td>18mcg QD</td>
<td>Inhalation via dry powder inhaler or MDI</td>
<td>Long acting anticholinergic</td>
</tr>
<tr>
<td>Formoterol (Perforomist®)</td>
<td>20mcg BID</td>
<td>Inhalation via nebulizer</td>
<td>Long acting anticholinergic</td>
</tr>
<tr>
<td>Umeclidinium (Incruse Ellipta®)</td>
<td>62.5mcg QD</td>
<td>Inhalation via dry powder inhaler</td>
<td>Long acting anticholinergic</td>
</tr>
<tr>
<td>Aclidinium (Tudorza Pressair®)</td>
<td>400mcg BID</td>
<td>Inhalation via dry powder inhaler</td>
<td>Long acting anticholinergic</td>
</tr>
</tbody>
</table>

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<th>Generic (Trade Name)</th>
<th>Adult Starting Dose</th>
<th>Routes of Administration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prednisone (Deltasone®)</td>
<td>10mg QD</td>
<td>PO</td>
<td>Risk for peripheral edema Dose early in the day</td>
</tr>
<tr>
<td>Dexamethasone (Decadron®)</td>
<td>2-4mg QD</td>
<td>PO/PR/SC/IV/IM</td>
<td>Less risk for peripheral edema Dose early in the day</td>
</tr>
<tr>
<td>Budesonide (Pulmicort®)</td>
<td>2mg BID-QID</td>
<td>Inhalation via nebulizer or dry powder inhaler</td>
<td>Risk for oral thrush</td>
</tr>
<tr>
<td>Fluticasone (Flovent®)</td>
<td>50-500mcg QD</td>
<td>Inhalation via dry powder inhaler or MDI</td>
<td>Risk for oral thrush</td>
</tr>
</tbody>
</table>
COPD- Pharmacological Therapy

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<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ipratropium/Albuterol (Combivent®, Duoneb®)</td>
<td>500mcg/2.5mg QID MDI: 1 puff QID</td>
<td>Inhalation via nebulizer or MDI</td>
<td>Short acting anticholinergic + Short acting beta-agonist</td>
</tr>
<tr>
<td>Umeclidinium/ Vilanterol (Anoro Ellipta®)</td>
<td>1 puff QD</td>
<td>Inhalation via dry powder inhaler</td>
<td>Long acting anticholinergic + Long acting beta-agonist</td>
</tr>
<tr>
<td>Budesonide/Formoterol (Symbicort®)</td>
<td>2 puffs BID</td>
<td>Inhalation via MDI</td>
<td>Inhaled steroid + Long acting beta-agonist</td>
</tr>
<tr>
<td>Fluticasone/Salmeterol (Advair®)</td>
<td>1 puff BID</td>
<td>Inhalation via dry powder inhaler or MDI</td>
<td>Inhaled steroid + Long acting beta-agonist</td>
</tr>
</tbody>
</table>

COPD- Question

- Case 1:
  - 82 y/o male with hospice diagnosis of COPD complains of dyspnea. Patient has not been able to use his inhalers properly, and recently had thrush. Patient prefers not to use opioids or benzodiazepines.
  - Current Medications: Atrovent® 2 puffs QID, Proair® 2 puffs q4h prn, Flovent® 2 puffs BID

- What action is the most appropriate intervention?
  A. Change inhalers to ipratropium/albuterol (Duoneb®) via nebulizer QID, and prednisone (Deltasone®) 10mg daily
  B. Change Flovent® to budesonide (Pulmicort®) via nebulizer BID
  C. Change ipratropium (Atrovent®) to arformoterol (Brovana®) 15mcg BID, and Proair to albuterol (AccuNeb®) via nebulizer q4h
  D. Start morphine (Roxanol®) for dyspnea as needed
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  – 82 y/o male with hospice diagnosis of COPD complains of dyspnea. Patient has not been able to use his inhalers properly, and recently had thrush. Patient prefers not to use opioids or benzodiazepines.
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  B. Change Flovent® to budesonide (Pulmicort®) via nebulizer BID
  C. Change ipratropium (Atrovent®) to arformoterol (Brovana®) 15mcg BID, and Proair to albuterol (AccuNeb®) via nebulizer q4h
  D. Start morphine (Roxanol®) for dyspnea as needed

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Edema
Edema

- Edema
  - Peripheral
    - Heart, kidney, liver failure
    - Feet, ankles, legs
    - Pitting edema
  - Ascites
    - Liver failure or malignancy
    - Accompanied by abdominal pain, nausea, anorexia, vomiting
    - Peritoneal space
  - Lymphedema
    - Lymphatic system failure
    - Swelling of tissue

Edema - Medication Causes

<table>
<thead>
<tr>
<th>Anti-Inflammatory</th>
<th>Anti-Hypertensives</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibuprofen (Motrin ®)</td>
<td>Metoprolol (Toprol ®)</td>
<td>Gapapentin (Neurontin ®)</td>
</tr>
<tr>
<td>Naproxen (Aleve ®)</td>
<td>Verapamil (Calan ®)</td>
<td>Megestrol (Megace ®)</td>
</tr>
<tr>
<td>Celecoxib (Celebrex ®)</td>
<td>Carvedilol (Coreg ®)</td>
<td>Estrogen (Premarin ®)</td>
</tr>
<tr>
<td>Prednisone (Deltasone ®)</td>
<td>Clonidine (Catapres ®)</td>
<td>Pioglitazone (Actos ®)</td>
</tr>
<tr>
<td>Dexamethasone (Decadron ®)</td>
<td>Hydralazine (Apresoline ®)</td>
<td>Acyclovir (Zovirax ®)</td>
</tr>
</tbody>
</table>
Edema

• Non-Pharmacological Therapy
  – Elevate extremities
  – Compression
  – Dietary restrictions
  – Paracentesis
  – Lymphatic massage

• Pharmacological Therapy:
  – Diuretics:
    • Impair reabsorption of sodium
    • Limited/no benefit in lymphedema
    • Malignant ascites should focus on comfort care

  – Risks with diuretics:
    • Hypokalemia
    • Orthostatic hypotension
    • Hypotension
    • Dehydration
      – Skin Turgor
### Edema- Pharmacological Therapy

<table>
<thead>
<tr>
<th>Generic (Trade Name)</th>
<th>Adult Starting Dose</th>
<th>Routes of Administration</th>
<th>Loop Diuretic Equivalent Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furosemide (Lasix®)</td>
<td>20mg QD</td>
<td>PO/SL/PR/SC/IM/IV</td>
<td>40mg (Lasix® IV dose is equal to ½ PO dose)</td>
</tr>
<tr>
<td>Bumetanide (Bumex®)</td>
<td>0.5mg QD</td>
<td>PO/IV/IM</td>
<td>1mg (Bumex® IV to PO dose is the same)</td>
</tr>
<tr>
<td>Torsemide (Demadex®)</td>
<td>10mg QD</td>
<td>PO/IV</td>
<td>20mg (Demadex® IV to PO dose is the same)</td>
</tr>
<tr>
<td>Metolazone (Zaroxolyn®)</td>
<td>2.5mg QD or PRN</td>
<td>PO</td>
<td>Thiazide diuretic</td>
</tr>
<tr>
<td>Hydrochlorothiazide (Microzide®)</td>
<td>25mg QD</td>
<td>PO</td>
<td>Thiazide diuretic Ineffective with CrCl&lt;30ml/min</td>
</tr>
<tr>
<td>Spironolactone (Aldactone®)</td>
<td>25mg QD</td>
<td>PO</td>
<td>Potassium sparing diuretic 40mg:100mg ratio with Lasix®</td>
</tr>
</tbody>
</table>
Edema- Question

• Case 2:
  – 78 y/o male with hospice diagnosis of CHF complains of edema in both legs that is bothersome, and patient has shortness of breath.
  – Assessment: 2+ pitting edema, BP 89/60 HR 87
  – Current Medications: Tylenol® 500mg q4h prn, Lasix® 80mg daily, K-Tab® 20meq daily, Celexa® 20mg daily, Amlodipine® 10mg daily

• What action is the most appropriate intervention?
  A. Initiate comfort medications for dyspnea
  B. Add metolazone (Zaroxolyn®) 2.5mg daily as needed
  C. Stop amlodipine (Norvasc®)
  D. Both A & C
Dyspnea - Pharmacological Therapy

- Opioids
  - Suppress respiratory awareness
  - Decrease response to hypoxia and hypercapnia
  - Sedation
  - Vasodilate lungs
  - Remember to add bowel regimen!
- Benzodiazepines
  - Anxiolytic properties

### Dyspnea - Pharmacological Therapy: Opioids

<table>
<thead>
<tr>
<th>Generic (Trade Name)</th>
<th>Adult Starting Dose</th>
<th>Routes of Administration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine (Roxanol®)</td>
<td>2.5-5mg Q4H PRN</td>
<td>PO/SL/PR/SC/IV</td>
<td>Monitor for signs of neurotoxicity in renal impairment</td>
</tr>
<tr>
<td>Hydromorphine (Dilaudid®)</td>
<td>2mg Q4H PRN</td>
<td>PO/SL/PR/SC/IV</td>
<td>Monitor for signs of neurotoxicity in renal impairment</td>
</tr>
<tr>
<td>Oxycodone (Roxicodone®, OxyFast®)</td>
<td>2.5-5mg Q4H PRN</td>
<td>PO/SL/PR</td>
<td>Preferred in patients with renal failure</td>
</tr>
</tbody>
</table>
Dyspnea- Pharmacological Therapy: Benzodiazepines

<table>
<thead>
<tr>
<th>Generic (Trade Name)</th>
<th>Adult Starting Dose</th>
<th>Routes of Administration</th>
<th>Approximate Equivalent Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alprazolam (Xanax®)</td>
<td>0.25mg TID PRN</td>
<td>PO/SL/PR</td>
<td>0.5mg</td>
</tr>
<tr>
<td>Lorazepam (Ativan®)</td>
<td>0.5mg Q4H PRN</td>
<td>PO/SL/PR/SC/IM/IV</td>
<td>1mg</td>
</tr>
<tr>
<td>Clonazepam (Klonopin®)</td>
<td>0.25mg BID PRN</td>
<td>PO/SL/PR</td>
<td>0.25mg</td>
</tr>
<tr>
<td>Diazepam (Valium®)</td>
<td>2mg TID PRN</td>
<td>PO/SL/PR/IM/IV</td>
<td>5mg</td>
</tr>
</tbody>
</table>

Nebulized Therapy

- Inconsistent data from studies\(^8\)
- Increased cost
- Effectiveness decreased:
  - Malignant lung disease
  - Thick secretions
- Refractory use only
- May be beneficial in patients not willing or able to take oral /SL medication or cannot tolerate side effects, failed other available options
Dyspnea- Pharmacological Therapy

• Nebulized Therapy
  – Furosemide
    • Enhance pulmonary stretch receptor activity
    • Increase ability to synthesize bronchodilating agents
    • No diuretic effect
  – Fentanyl is the preferred opioid over morphine
    • More lipophillic and may contribute to higher systemic bioavailability
    • More patient reported benefit for dyspnea\(^8\-^9\)

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<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride 0.9% (saline nebulization solution)</td>
<td>3ml Q4H PRN</td>
<td>Inhalation</td>
<td>Benefit with thick secretions</td>
</tr>
<tr>
<td>Furosemide (Lasix®)</td>
<td>20mg QID</td>
<td>Inhalation</td>
<td>Dilute with 2ml 0.9% NS and administer via nebulizer</td>
</tr>
<tr>
<td>Fentanyl (Sublimaze®)</td>
<td>25mcg Q2H PRN</td>
<td>Inhalation</td>
<td>Dilute with 2ml 0.9% NS and administer via nebulizer</td>
</tr>
</tbody>
</table>
Dyspnea

Underlying Factors To Address When Managing Dyspnea

<table>
<thead>
<tr>
<th>Dyspnea Cause</th>
<th>Therapeutic Options</th>
<th>Suggested Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD/ Bronchospasm</td>
<td>Short-acting bronchodilator</td>
<td>Albuterol via nebulizer Q4H PRN</td>
</tr>
<tr>
<td></td>
<td>+/- corticosteroid</td>
<td>+/- Prednisone</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Benzodiazepines</td>
<td>Lorazepam 0.5mg Q4H PRN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>anxiety or dyspnea</td>
</tr>
<tr>
<td>Pain</td>
<td>Opioids</td>
<td>Morphine (20mg/ml) 2.5mg PO/SL/PR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q4H PRN pain or dyspnea</td>
</tr>
<tr>
<td>CHF/ Volume Overload</td>
<td>Diuretics</td>
<td>Temporarily double current diuretic dose x 3 days</td>
</tr>
</tbody>
</table>

**Case 3:**

– 83 y/o female with hospice diagnosis of CVA presents with increased shortness of breath. Patient also is having difficulty swallowing her medications. Assessment: RR 13, Pulse Ox 94%
– Current Medications: Hydrocodone/APAP 5/325mg q4h prn, Senna-S® 2 tabs BID, Albuterol 0.083% via nebulizer q4h prn

**What action is the most appropriate initial intervention?**

A. Replace hydrocodone/APAP (Norco®) with morphine (Roxanol®) 2.5-5mg q2h prn pain or dyspnea
B. Start morphine via nebulizer 5mg q4h prn dyspnea
C. Increase albuterol (AccuNeb®) to every 1 hour prn
D. Increase hydrocodone/APAP (Norco®) to 10/325 SL for dyspnea
Case 3:

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C. Increase albuterol (AccuNeb®) to every 1 hour prn
D. Increase hydrocodone/APAP (Norco®) to 10/325 SL for dyspnea

Secretions
Secretions

• Secretions:
  – Thick secretions
    • Abnormally thick secretions (mucus plugs) that can partially obstruct the airway leading to airway resistance, and increased exertion
    • Dehydration produces adhesion of mucus to the airway surface
    • Goal of therapy: decrease dyspnea, fatigue, insomnia and improve quality of life
  – Sialorrhea
    • Drooling or excessive secretions
    • Leakage of saliva from the mouth due to diminished swallowing ability or neurodegenerative disorders making it difficult to control saliva

Secretions

• Secretions:
  – Terminal Secretions
    • Also known as “Death Rattle”
    • Accumulation of fluid in lungs or oropharynx
    • Wet, noisy, rattling, gargling sound as air passes over the accumulated secretions during breathing
    • Occurs in patients:
      – Unconscious
      – Too weak to clear secretions
      – Cannot swallow
      – Typically in the last 48 hours of life
    • Oral fluids, parenteral hydration, and tube feedings may increase secretions at end of life
Take Note!

- Families and Caregivers should be advised the sound is unlikely causing discomfort to the patient
- Terminal secretions do not require treatment unless the sound is very distressing for the family

Secretions - Medication Causes

**Thick Secretions**
- Anticholinergics
- Decongestants
- Tricyclic Antidepressants
- Opioids
- Ipratropium (Atrovent®)
- Tiotropium (Spiriva®)

**Sialorrhea**
- Benzodiazepines
- Clozapine (Clozaril®)
- Carbidopa-levodopa (Sinemet®)
- Donepezil (Aricept®)
- Rivastigmine (Exelon®)
- Galantamine (Razadyne®)
- Ropinirole (Requip®)
Secretions

• Non-Pharmacological Therapy
  – Inform and educate family about what to expect
  – Thick Secretions:
    • Hydration
    • Encourage coughing
    • Oropharyngeal suctioning may be disturbing to the patient and family

• Terminal Secretions:
  • First line therapy
  • Gentle swabbing of mouth and lips with moist oral swab
  • Position patient on his/her side or in a semi-prone position
  • Discontinue or reduce overhydration and excess fluid accumulation
  • Aggressive suctioning can lead to tracheal edema and pulmonary congestion
Pharmacological Therapy:
- Medications to reduce terminal secretions should be initiated at the first sign of noisy breathing
- They do not affect existing respiratory secretions
- These medications have limited or no effect on secretions due to pneumonia or pulmonary edema
- If possible, taper and discontinue an offending medication rather than adding another medication to treat a medication side effect

For thick secretions:
- If patient is able to cough and expel mucus: focus on thinning secretions
- If patient is not able to cough, swallow, expel mucus: focus on drying secretions
Secretions- Pharmacological Therapy: Thinning Medications

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<thead>
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</thead>
<tbody>
<tr>
<td>Guaifenesin (Robitussin®, Mucinex®)</td>
<td>200mg Q4H PRN 600mg ER BID</td>
<td>PO</td>
<td>Must have good fluid intake for best effect</td>
</tr>
<tr>
<td>Saline, nebulized</td>
<td>3-5ml via nebulizer Q2H PRN</td>
<td>Inhalation</td>
<td>Moisturizes airways and loosens secretions</td>
</tr>
</tbody>
</table>

Secretions- Pharmacological Therapy: Drying Medications

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Atropine 1% (Isopto Atropine®)</td>
<td>2 drops Q4H PRN</td>
<td>SL</td>
<td>Easiest for route of administration</td>
</tr>
<tr>
<td>Hyoscyamine (Levsin®, Hyomax-SL®)</td>
<td>0.125mg Q4H PRN</td>
<td>PO/SL</td>
<td>ER tablets not appropriate for terminal secretions</td>
</tr>
<tr>
<td>Glycopyrrolate (Robinul®, Cuvposa®)</td>
<td>0.2mg SC Q6H PRN 1mg PO Q6H PRN</td>
<td>PO/SC/IM/IV</td>
<td>Fewer CNS side effects Low bioavailability Oral tablets not appropriate for terminal secretions</td>
</tr>
<tr>
<td>Scopolamine (Transderm Scop®)</td>
<td>1 patch Q72H</td>
<td>TD</td>
<td>Slow onset</td>
</tr>
</tbody>
</table>
Pharmacological Therapy:
  – Anticholinergic Medications
    • Know the ABCD’S of anticholinergic side effects:
      Agitation (Anorexia)
      Blurry vision
      Constipation/Confusion
      Dry Mouth
      Sedation/
      Stasis of urine

  – Avoid use of multiple anticholinergic medications together

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Case 4:
  – A 92 y/o female with hospice diagnosis of liver cancer has developed
    a loud rattle, family is worried about comfort.
  – Current Medications: Roxanol 5mg q1h prn, lorazepam 0.5mg q4h
    prn, bisacodyl 10mg supp qd prn, atropine 1% 2 drops SL q4h prn

What action is the most appropriate initial intervention?
  A. Begin using atropine (Isopto®) SL drops for terminal secretions
  B. Discuss with family the sound likely does not represent any
    discomfort for the patient. Continue good mouth care, gentle
    swabbing with moistened oral swabs (Toothettes®) as needed
  C. Begin oropharyngeal suctioning
  D. Add order for scopolamine (Transderm Scop®) patch Q72H
Secretions- Question

- Case 4:
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  C. Begin oropharyngeal suctioning
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Key Points

- Goal of therapy is to decrease the patient’s perception of dyspnea
- Dyspnea
  - Assess for reversible causes for dyspnea and correct first, if able, prior to treating with opioids and/or benzodiazepines
- COPD
  - Assess ability to properly use inhalers, avoid overuse of bronchodilators
- Edema
  - Treat peripheral edema with diuretics if BP allows
- Secretions
  - Non-pharmacological treatment is first line for terminal secretions
Patient Case- Mrs. A

–Refresher: 45 year old female admitted to hospice with recurrent breast cancer and lung metastases. Lymph and bone metastases suspected.

–Mrs. A presents with swelling at the lymph node area in her upper left arm. This has been bothersome for Mrs. A.
–Her family is reporting concern about her breathing, her respiratory rate is 10. They are worried she is uncomfortable. Mrs. A reports she is not short of breath.

What action is the most appropriate intervention?

A. Start furosemide (Lasix®) 40mg daily and spironolactone (Aldactone®) 100mg daily for lymphedema. Add albuterol (AccuNeb®) via nebulizer q4h prn for dyspnea

B. Increase morphine and add albuterol (AccuNeb®) via nebulizer q4h prn for dyspnea

C. Initiate lymphatic massage (or manual lymph drainage) by a certified therapist. Discuss with family dyspnea is subjective and patient is comfortable, review patient goals. Comfort medications for dyspnea are in place as needed

D. Start furosemide (Lasix®) 20mg daily for lymphedema. Discuss with family dyspnea is subjective and patient is comfortable, review patient goals. Comfort medications for dyspnea are in place as needed
Patient Case- Mrs. A

What action is the most appropriate intervention?

A. Start furosemide (Lasix®) 40mg daily and spironolactone (Aldactone®) 100mg daily for lymphedema. Add albuterol (AccuNeb®) via nebulizer q4h prn for dyspnea

B. Increase morphine and add albuterol (AccuNeb®) via nebulizer q4h prn for dyspnea

C. Initiate lymphatic massage (or manual lymph drainage) by a certified therapist. Discuss with family dyspnea is subjective and patient is comfortable, review patient goals. Comfort medications for dyspnea are in place as needed

D. Start furosemide (Lasix®) 20mg daily for lymphedema. Discuss with family dyspnea is subjective and patient is comfortable, review patient goals. Comfort medications for dyspnea are in place as needed

Questions?

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References
