

Medications

Home Medications:

- Aspirin (Bayer) 81 mg PO daily
 - Salicylate/ NSAID
 - This medication helps with pain medication and help reduce flare-ups in COPD exacerbation.
 - Assess the patient's vital signs and breath sounds and respirations before administering medications. Assess for abnormal bleeding and bruising before administering. Check the patient's platelet count.
- Atorvastatin (Lipitor) 40 mg PO daily at HS
 - HMG_CoA reductase inhibitor/ Antihyperlipidemic
 - This medication helps reduce inflammation therefore helps with COPD because it reduces the inflammation in the lungs.
 - Assess vital signs and respirations and breath sounds before administering.

Hospital Medications:

- Normal Saline 75 mL/hr
 - Crystalloid Fluid
 - The patient is on IV fluids to help with the loosening of mucus in the lungs to help with proper oxygenation.
 - Assess patient's lung sounds and assess for edema and vital signs before administering.
- Potassium Chloride 40 mEq IV once
 - Electrolyte
 - The patient is receiving potassium chloride to help increase his potassium level.
 - Assess patient's potassium level before administering this medication.
- Azithromycin (Zmax) 500 mg PO daily
 - Macrolide/ antibiotic
 - The patient is taking this medication for his COPD exacerbation. This medication will kill the bacteria and reduce inflammation in the lungs.
 - We need to check the patient's lung sounds and vital signs before administering this medication.
- Levaquin (levofloxacin) 750 mg IV daily
 - Fluoroquinolone/ Antibiotic
 - The patient is taking this medication for his COPD exacerbation. This medication will kill the bacteria and reduce inflammation in the lungs.
 - We need to check the patient's lung sounds and vital signs before administering this medication.
- DuoNeb (ipratropium bromide) 1 nebulizer q4h PRN
 - Anticholinergic/ bronchodilator
 - Shortness of breath/ wheezing
 - This is given to help the patient breathe and opening the lungs.
 - Assess vital signs, respirations, and breath sounds before administering.
- Acetaminophen (Tylenol) 650 mg PO q4h PRN
 - Nonsteroidal, para-aminophenol derivative
 - Pain/fever
 - Patient could potentially get a fever due to the bacteria and inflammation in his lungs but also could take this medication to help reduce mild to moderate pain.
 - Check the patient's vital signs and pain assessment before administering.

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Lab Values/Diagnostics

Labs:

- Na: 124
 - Normal: 135-145 mmol/L
 - Amiodarone can lower the patient's sodium level (Medscape, 2020).
- K: 2.8
 - Normal: 3.5-5
 - Potassium is low due to patient being in respiratory acidosis (UAHS Center on Aging, 2019).
- Creatinine: 2.8
 - Normal: 0.6-1.2 mg/dL
 - Dehydration can make the creatinine levels rise (MedLexicon, n.d.)
- ABGs:
 - pH-7.25
 - Normal: 7.35-7.45
 - Decreased due to being in respiratory acidosis (Nurses Learning, n.d.).
 - CO2-84
 - Normal: 35-45
 - Increased due to not properly oxygenating the body (Nurses Learning, n.d.).

Diagnostic:

- Chest X-Ray
 - Findings consistent with chronic bronchitis
 - Chest x-ray was done to show the progression of the patients COPD.
- EKG
 - Shows A-fib at a rate of 88 bpm
 - The EKG was done because the patient has a history of A-fib.

Demographic Data

Date of Admission: 10/16/21

Admission Diagnosis/Chief Complaint: Shortness of breath, cough

Age: 72-year-old

Gender: Male

Race/Ethnicity: African American

Allergies: No known allergies

Code Status: DNR/DNI

Height in cm: 175.3 cm

Weight in kg: 66.2 kg

Psychosocial Developmental Stage: Maturity/EgoIntegrity vs Despair (Erickson's summary chart, n.d.)

Cognitive Developmental Stage: Formal Operational (Cherry, 2020)

Braden Score: 20, not a skin risk

Morse Fall Score: 60, high fall risk

Admission History

On October 16, 2021, a 72-year-old African American male came in with complaints of shortness of breath and a cough. Patient states that his activity levels have gone down for the past several days due to having worsening shortness of breath. Patient states exertion aggravates his shortness of breath and rest alleviates the shortness of breath. He also uses PRN oxygen at 2L/min to help manage his COPD exacerbation.

Medical History

Previous Medical History: Hypertension, Atrial Fib, hyperlipidemia, COPD

Prior Hospitalizations: N/A

Previous Surgical History: Appendectomy in 1995

Social History: Never a smoker, casual drinker (1-2x per month), and denies drug use

Pathophysiology

Disease process: Chronic obstructive pulmonary disease combines emphysema, chronic bronchitis, and hyperreactive airway disease (Capriotti, 2020). COPD is the third leading cause of death in the United States and the leading cause of disability. Smoking is the most significant cause of COPD. Smokers are 90% of patients, and the other 10 percent are occupational and environmental exposures to chemicals, dust, and secondhand smoke. COPD is a combination of genetic susceptibility and environmental factors. It is caused by the alpha one anti-trypsin (AAT) deficiency (Capriotti, 2020). AAT, a serum protein typically found in the lungs, inhibits elastase and proteolytic enzyme released by WBCs. AAT deficiency leads to the early development of emphysema in young adults. Connective tissue changes in the walls of the alveoli cause decreased elasticity and recoil of lung tissue. COPD can affect every body system because COPD affects the way the patient receives oxygen. When oxygenation is affected poorly, it can lead to improper functioning of the body systems (Capriotti, 2020).

S/S of disease: Signs and Symptoms of chronic obstructive pulmonary disease are chronic bronchitis, emphysema, and asthma (Capriotti, 2020). Dyspnea is usually the first sign of COPD, and whenever the COPD progresses, the dyspnea upon exertion gets progressively worse. Other signs and symptoms are productive coughs, shortness of breath, wheezing, barrel-shaped chest, hypoxia, and cyanosis. My patient was having worsening shortness of breath with exertion and a cough (Capriotti, 2020).

Method of Diagnosis: The way to diagnose COPD is a COPD assessment test (CAT). The test is a questionnaire that asks patients questions about their breathing habits specifically (Capriotti, 2020). Another way to diagnose COPD is through PFTs or otherwise known as spirometry. It measures the air volume in the lungs that can be expelled during exhalation and airflow limitation when breathing. Another test would be ABGs, CBC, and ECG. Later in the progression in COPD can be consistent with emphysema (Capriotti, 2020).

Treatment of disease: The disease is treated in steps. The first treatment is a short-acting bronchodilator for patients with the mild disease process. Then, long-acting bronchodilators can be incorporated as the disease progresses (Capriotti, 2020). Long acting antimuscarinic agents are the cornerstone therapies. Inhaled bronchodilators are the treatment of choice for patients with COPD. Oral corticosteroids can be added to the regimen for COPD exacerbations. Nonpharmacological interventions include smoking cessation, influenza and pneumonia vaccines, pulmonary rehab, and oxygen therapy. My patient is being treated with a DuoNeb, Levaquin, and azithromycin to help with the COPD exacerbation and bring down the inflammation in their lungs (Capriotti, 2020).

Active Orders

- Continuous oxygen therapy at home: 2L/min via nasal cannula
 - This order is to keep the patient's oxygen level within normal limits and to not drop out of normal limits.
- Vital signs every 4 hours
 - This is to make sure the patients oxygen saturation does not go below normal limits
- Drawing blood for ABGs to check the patients CO2 levels
 - This is being done because the patient is having a COPD exacerbation and their CO2 levels are very high by drawing ABGs we can determine if we are treating the patient correctly.
- Pain assessments every 4 hours
 - This is done to make sure we are keeping the patient's pain under control and keeping the patient comfortable.
- Normal Saline 75 mL/hr
 - This is to keep the patient hydrated and loosen the mucus in the patient's lungs
- I&O
 - I&Os are to make sure the patient's kidneys and bowel are working and make sure the patient is eating adequately.

Physical Exam/Assessment

General: Patient is alert and responsive, A&Ox4 to person, place, situation, and time, no distress, and well-groomed and appropriately dressed.

Integument: The patient's skin is warm, dry, and color is usual for ethnicity. The patient's skin turgor is elastic. There are no abnormal bruising, wounds, or rashes. There are no drains present.

HEENT: Face and Skull are symmetric. Trachea is midline, oral mucosa is moist and intact. Uvula is midline, no tonsil enlargement noted, and tongue is pink with no lesions. Ears are symmetrical and tympanic membranes are pink, pearly grey bilaterally. Eyes are PERRLA, pupils constrict normally, EOM is normal, and Sclera is white bilaterally. Nose, septum is midline with no bleeding or mucus and no polyps. Teeth are clean white and intact.

Cardiovascular: Heart sounds are S1S2 and is in regular sinus rhythm. Peripheral pulses- radial pulse is 3+ bilaterally and pedal pulse is 3+ bilaterally. Capillary refill is normal and less than 3 seconds in upper extremities, and normal less than 3 seconds in the lower extremities. Patient does not have any edema, 0. Patient does not have neck vein distention.

Respiratory: Patient has diminished breath sounds throughout all lobes anteriorly and posteriorly. Patient is not using accessory muscles to breathe. Lung aeration is equal. Breath sounds were equal. Diminished breath sounds are heard in a COPD exacerbation.

Genitourinary: Urine color was clear yellow. Total urine voided in 4 hours was 1750 mL. Inspection of genitals was clean, intact, normal for age

Musculoskeletal: Nail beds are pink with less than 3 second refill, upper and lower extremities are warm to the touch with no edema and normal color for ethnicity pulses were +3 in radial and pedal pulses. ROM active ROM in all 4 extremities- equal with no pain with ROM. Patient does not use any supportive devices. Patient has 5 strengths in all four extremities bilaterally.

Neurological: Patient is orientated to person, place, situation, and time. MAEW: can move all upper and lower extremities well and equally in strength. Mental status has normal cognition and is alert and oriented x4. Speech is clear and sensory is intact and no tingling or numbing. LOC: alert awake and answers questions appropriately.

Most recent VS (include date/time and highlight if abnormal): 1100: P-68, BP-138/62, R-24, T-36.8 O2-97% on 2L via nasal canula

Pain and pain scale used: 0700: numeric-6/10- generalized, 1100: numeric-2/10-generalized

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| <p align="center">Nursing Diagnosis 1</p> <p>Decreased gas exchange related to altered oxygen supply occurring with small airway inflammation and parenchymal destruction or alveolar edema as evidenced by patient is need 2L/min via nasal cannula to keep his oxygen saturation within normal limits (Swearingen & Wright, 2019).</p> | <p align="center">Nursing Diagnosis 2</p> <p>Dyspnea related to ineffective inspiration and expiration occurring with chronic airflow limitations as evidenced by patient complains off shortness of breath and a cough (Swearingen & Wright, 2019).</p> | <p align="center">Nursing Diagnosis 3</p> <p>Fatigue with decreased exercise tolerance related to imbalance between oxygen supply and demand occurring with inefficient work of breathing as evidenced by patient stating exertion aggravates his shortness of breath (Swearingen & Wright, 2019).</p> |
| <p align="center">Rationale</p> <p>This nursing diagnosis was chosen due to patient having worsening shortness of breath with exertion and that is not normal for him and has been happening for the past couple of days (Swearingen & Wright, 2019).</p> | <p align="center">Rationale</p> <p>This nursing diagnosis was chosen due to patient stating they are having worsening shortness of breath and a cough (Swearingen & Wright, 2019).</p> | <p align="center">Rationale</p> <p>This nursing diagnosis was chosen due to the patient stating they are having worsening shortness of breath upon excretion, and this is a sign of COPD exacerbation (Swearingen & Wright, 2019).</p> |
| <p align="center">Interventions</p> <p>Intervention 1: Auscultate breath sounds every 2-4 hours and report any worsening in breath sounds (Swearingen & Wright, 2019). Intervention 2: Monitor the patients oxygen saturation and titrate oxygen to keep oxygen levels within normal limits (Swearingen & Wright, 2019).</p> | <p align="center">Interventions</p> <p>Intervention 1: Auscultate breath sounds every 4 hours report any worsening in breath sounds (Swearingen & Wright, 2019). Intervention 2: Administer DuoNeb 1 nebuole inhaled every 4 hours as needed for shortness of breath and wheezing (Swearingen & Wright, 2019).</p> | <p align="center">Interventions</p> <p>Intervention 1: Monitor patient's respiratory status in response to exercise including oxygen saturation (Swearingen & Wright, 2019). Intervention 2: Allow for 90-minute rest periods after exercise (Swearingen & Wright, 2019).</p> |
| <p align="center">Evaluation of Interventions</p> <p>Patient is being cooperative and stated they would let us know if they have any changes in their breathing to let us know and we are also checking oxygen saturation every 4 hours to make sure the patient stays within normal limits.</p> | <p align="center">Evaluation of Interventions</p> <p>Patient understood to report any worsening of breath sounds and the nurse was checking lung sounds. Patient was receiving DuoNeb treatments every four hours to help with his shortness of breath.</p> | <p align="center">Evaluation of Interventions</p> <p>Patient understood to make sure and have rest periods after exercise and the nurses were watching the patient's oxygen saturation when the patient is up and walking around and doing other activities.</p> |

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