Preconference Form

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Medical Diagnosis/Disease: Chronic Obstructive Pulmonary Disease

NCLEX IV *(8)*: **Physiological Integrity/Physiological Adaptation**

Anatomy and Physiology

Normal Structures

The primary purpose of the respiratory system is to exchange gas. Transferring of oxygen and carbon dioxide. Upper respiratory tracts include the nasal cavity, pharynx, epiglottis, larynx and trachea. Air is passed through those structures to reach the lower respiratory tract. The lower respiratory tract includes trachea: a passageway for moving air down into the lungs, the trachea branches into the left and right main bronchi carina: a point where the right and left main stem bronchi split, the air has officially entered the lower respiratory tract bronchi: conduct air to the lungs so gas exchange can occur, it is lined with a mucous layer protecting the lungs from inhaled pathogens bronchioles: branch like structures that progressively gets smaller leading to alveoli alveoli: small air sacs in the lungs that are the primary site of gas exchange for oxygen and carbon dioxide, the alveoli are interconnected by Pores of Kohn which allow movement of air between alveoli surfactant: produced by alveoli to decrease surface tension allowing for the alveoli to stay inflated making them less likely to collapse lungs: the right lung is divided into 3 lobes up middle and lower, the left lung is divided into two lobes, making room for the heart diaphragm: a major muscle of respiration during inspiration the diaphragm contracts moving downward increasing intrathoracic volume, during expiration the diaphragm moves upward decreasing intrathoracic volume

Pathophysiology of Disease

Chronic obstructive pulmonary disease is a progressive lung disease characterized by air flow limitation that is not fully reversible. Air flow limitation is progressive and associated with an abnormal inflammation response of the lungs to carcinogens (smoking) or gases. Chronic obstructive pulmonary is chronic inflammation resulting in airway remodeling, thickening of the airway walls, increased mucus production, and damage to epithelial cells, which leads to an obstruction within the airway. COPD lungs become obstructed because of the increased mucus production thinning thinning the bronchioles (airway) and damaged alveoli which leads to an effective gas exchange. As COPD becomes chronic air trapping, gas exchange, and abnormalities in air flow limitations happened to get worse. COPD patients often have a easy time inhaling and a difficult time exhaling which leads to the body retaining carbon dioxide and the body becomes deficient in oxygen

NCLEX IV *(7)*: **Reduction of Risk**

Anticipated Diagnostics & Labs

- Sputum culture
- ABGs
- Alpha-1 antitrypsin deficiency screening

Additional Diagnostics

- CXR
- CT scan
- CAPTURE questionnaire
- 6 Minute Walk Test
- Spirometry

NCLEX II *(3)*: Health Promotion and Maintenance

Contributing Risk Factors
- Smoking
- Age > 40
- Exposure to secondhand smoking
- History of allergies, asthma, nasal polyps, sinusitis, or serve respiratory infections
- Air pollution
- Low birth weight
- Occupational exposure
- Poverty
- HIV

Signs and Symptoms
- Dyspnea (progressive over time, persistent, and worse with activity)
- Cough (intermittent and or unproductive)
- Wheezing
- Sputum production
- Weight loss

NCLEX IV *(7)*: Reduction of Risk

Possible Therapeutic Procedures

Non-surgical
- Oxygen therapy
- Exercise
- Medications (bronchodilators and corticosteroids)

Surgical
- Spirometry (used to confirm diagnosis)
- Biopsy
- Thoracentesis

Prevention of Complications
- Anxiety and depression
- Bacterial infections
- Pneumonia
- CAD
- Disability
- Muscle Weakness
- Weight loss
- Respiratory failure
- Heart failure

NCLEX IV *(6)*: Pharmacological and Parenteral Therapies

Anticipated Medication Management
- Bronchodilators
- Short-acting beta agonists
- Short-acting muscarinic antagonists
- Steroids
- Antibiotics

NCLEX IV *(5)*: Basic Care and Comfort

Non-Pharmacologic Care Measures
- Oxygen therapy
- Physical activity
- Nutritional support
- Smoking cessation (beneficial for smokers)

NCLEX III *(4)*: Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?
- Prognosis
- Financial burden
- Lifestyle changes
- Limited mobility
- Family concerns
- Lack of education

Client/Family Education

List 3 potential teaching topics/areas
- Avoid smoking cigarettes, pipes, cigars, and other types of tobacco along with secondhand smoking
- Avoid breathing in harmful fumes, gases, or polluted air over a long period of time
- Maintain a healthy lifestyle such as a healthy diet, exercise and overall healthy habits

NCLEX I *(1)*: Safe and Effective Care Environment

Multidisciplinary Team Involvement
- Respiratory therapy
- Occupational therapy
- Physical therapy
- Case management
- Pulmonologist
- Dietitian