Pneumonia Nursing Diagnoses and Nursing care plans

Pneumonia is a respiratory disorder that involves an inflammation of the lung parenchymal structures, such as the alveoli and bronchioles resulting in an altered gaseous exchange.

Pneumonia is caused by infectious agents such as bacteria, fungi, and viruses and noninfectious agents such as gastric secretions that are aspirated into the lungs or inhalation of volatile or irritating substances.

Causes of pneumonia

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The most common cause of community-acquired pneumonia in all groups is *S. pneumoniae* when an actual cause is identified

viruses have been found to be the most common cause in children less than 5 years of age.

Strep pneumoniae is the leading cause of subsequent infections.

On the other hand, Gram-negative bacilli like Escherichia coli and Enterobacteriaceae are the predominant causes of Hospital-acquired or ventilator-associated pneumonia.

Nursing Diagnosis

- Ineffective Airway Clearance

May be related to

- Tracheal bronchial inflammation, edema formation, increased sputum production
- Pleuritic pain
- Decreased energy, fatigue

Possibly evidenced by

- Changes in rate, depth of respirations
- Abnormal breath sounds, use of accessory muscles
- Dyspnea, cyanosis
- Cough, effective or ineffective; with/without sputum production

Desired Outcomes

- Identify/demonstrate behaviors to achieve airway clearance.
- Display patent airway with breath sounds clearing; absence of dyspnea, cyanosis.

Nursing Interventions

- Assess the rate and depth of respirations and chest movement.
    - Rationale: Tachypnea, shallow respirations, and asymmetric chest movement are frequently present because of discomfort of moving chest wall and/or fluid in lung.
- Auscultate lung fields, noting areas of decreased or absent airflow and adventitious breath sounds: crackles, wheezes.
    - Rationale: Decreased airflow occurs in areas with consolidated fluid. Bronchial breath sounds can also occur in these consolidated areas. Crackles, rhonchi, and wheezes are heard on inspiration and/or expiration in response to fluid accumulation, thick secretions, and airway spams and obstruction.
- Elevate head of bed, change position frequently.
    - Rationale: Doing so would lower the diaphragm and promote chest expansion, aeration of lung segments, mobilization and expectoration of secretions.
- Teach and assist patient with proper deep-breathing exercises. Demonstrate proper splinting of chest and effective coughing while in upright position. Encourage him to do so often.
    - Rationale: Deep breathing exercises facilitates maximum expansion of the lungs and smaller airways. Coughing is a reflex and a natural self-cleaning mechanism that assists the cilia to maintain patent airways. Splinting reduces chest discomfort and an upright position favors deeper and more forceful cough effort.
- Suction as indicated: frequent coughing, adventitious breath sounds, desaturation related to airway secretions.
    - Rationale: Stimulates cough or mechanically clears airway in patient who is unable to do so because of ineffective cough or decreased level of consciousness.
- Force fluids to at least 3000 mL/day (unless contraindicated, as in heart failure). Offer warm, rather than cold, fluids.
    - Rationale: Fluids, especially warm liquids, aid in mobilization and expectoration of secretions.
- Assist and monitor effects of nebulizer treatment and other respiratory physiotherapy: incentive spirometer, IPPB, percussion, postural drainage. Perform treatments between meals and limit fluids when appropriate.
    - Rationale: Nebulizers and other respiratory therapy facilitates liquefaction and expectoration of secretions. Postural drainage may not be as effective in interstitial pneumonias or those causing alveolar exudate or destruction. Coordination of treatments and oral intake reduces likelihood of vomiting with coughing, expectorations.
- Administer medications as indicated: mucolytics, expectorants, bronchodilators, analgesics.
    - Rationale: Aids in reduction of bronchospasm and mobilization of secretions. Analgesics are given to improve cough effort by reducing discomfort, but should be used cautiously because they can decrease cough effort and depress respirations.
- Provide supplemental fluids: IV.
    - Rationale: Room humidification has been found to provide minimal benefit and is thought to increase the risk of transmitting infection.
- Monitor serial chest x-rays, ABGs, pulse oximetry readings.
    - Rationale: Followers progress and effects of the disease process, therapeutic regimen, and may facilitate necessary alterations in therapy.
- Assist with bronchoscopy and/or thoracentesis, if indicated.
    - Rationale: Occasionally needed to remove mucous plugs, drain purulent secretions, and/or prevent atelectasis.

- Urge all bedridden and postoperative patients to perform deep breathing and coughing exercises frequently.
    - Rationale: To promote full aeration and drainage of secretions.

Nursing Diagnosis

- Impaired Gas Exchange

May be related to

- Alveolar-capillary membrane changes (inflammatory effects)
- Altered oxygen-carrying capacity of blood/release at cellular level (fever, shifting oxyhemoglobin curve)
- Altered delivery of oxygen (hypoventilation)

Possibly evidenced by

- Dyspnea, cyanosis
- Tachycardia
- Restlessness/changes in mentation
- Hypoxia

Desired Outcomes

- Demonstrate improved ventilation and oxygenation of tissues by ABGs within patient's acceptable range and absence of symptoms of respiratory distress.
- Participate in actions to maximize oxygenation.

Nursing Interventions

- Assess respiratory rate, depth, and ease.
    - Rationale: Manifestations of respiratory distress are dependent on/and indicative of the degree of lung involvement and underlying general health status.
- Observe color of skin, mucous membranes, and nailbeds, noting presence of peripheral cyanosis (nail beds) or central cyanosis (circumoral).
    - Rationale: Cyanosis of nail beds may represent vasoconstriction or the body's response to fever/chills; however, cyanosis of earlobes, mucous membranes, and skin around the mouth ("warm membranes") is indicative of systemic hypoxemia.
- Assess mental status.
    - Rationale: Restlessness, irritation, confusion, and somnolence may reflect hypoxemia and decreased cerebral oxygenation.
- Monitor heart rate and rhythm.
    - Rationale: Tachycardia is usually present as a result of fever and/or dehydration but may represent a response to hypoxemia.
- Monitor body temperature, as indicated. Assist with comfort measures to reduce fever and chills: addition or removal of bedcovers, comfortable room temperature, tepid or cool water sponge bath.
    - Rationale: High fever (common in bacterial pneumonia and influenza) greatly increases metabolic demands and oxygen consumption and alters cellular oxygenation.
- Maintain bedrest. Encourage use of relaxation techniques and diversional activities.

    - Rationale: Prevents over exhaustion and reduces oxygen demands to facilitate resolution of infection.
- Elevate head and encourage frequent position changes, deep breathing, and effective coughing.
    - Rationale: These measures promote maximum chest expansion, mobilize secretions and improve ventilation.
- Assess anxiety level and encourage verbalization of feelings and concerns.
    - Rationale: Anxiety is a manifestation of psychological concerns and physiological responses to hypoxia. Providing reassurance and enhancing sense of security can reduce the psychological component, thereby decreasing oxygen demand and adverse physiological responses.
- Observe for deterioration in condition, noting hypotension, copious amounts of bloody sputum, pallor, cyanosis, change in LOC, severe dyspnea, and restlessness.
    - Rationale: Shock and pulmonary edema are the most common causes of death in pneumonia and require immediate medical intervention.
- Monitor ABGs, pulse oximetry.
    - Rationale: Follows progress of disease process and facilitates alterations in pulmonary therapy.
- Administer oxygen therapy by appropriate means: nasal prongs, mask, Venturi mask.
    - Rationale: The purpose of oxygen therapy is to maintain PaO_2 above 60 mmHg. Oxygen is administered by the method that provides appropriate delivery within the patient's tolerance. Note: Patients with underlying chronic lung diseases should be given oxygen cautiously.

Nursing Diagnosis

- Risk for Deficient Fluid Volume

Risk factors may include

- Excessive fluid loss (fever, profuse diaphoresis, mouth