What is a Pulmonary Disease?

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Pulmonary disease is a broad term for different types of diseases affecting the lungs and respiratory system. Pulmonary diseases can include or be caused by:

- Chronic obstructive pulmonary disease (COPD)
- Neuro-muscular disorders HIV related infection
- Restrictive chest wall diseases

Symptoms of pulmonary disease will vary depending on the cause and may include: Breathlessness or dyspnea

- Fatigue
- Anorexia
- Muscle wasting
- Lightheadedness
- Anxiety
- Depression
- Possibly pain

Types of Pulmonary Disease

Chronic obstructive pulmonary disease (COPD) is a lung disease that causes difficulty with breathing due to damage that has occurred over many years. Smoking is one of the largest contributors to COPD. Emphysema is a type of COPD. In the lungs, the airways and alveoli lose their elasticity, the walls between the alveoli are destroyed (reducing surface area), and the walls of the airways become thick and inflamed and the cells in the airways make more mucus, which tends to clog the airways, inducing coughing and causing more breathlessness. Neuro-muscular disorders and chest wall restrictive disease can cause breathing difficulty due to muscle weakness or loss of compliance in the chest cavity.

What is the prognosis?

Individuals will experience periods of stability alternating with acute exacerbations of their disease that often result in a 911 call, emergency room visit and possible hospitalization. These exacerbations can be very frightening for patients and

caregivers. Because of advances in medication, technology and medical/nursing care, it is difficult to prognosticate each exacerbation. During an acute exacerbation of disease, a patient may die as a result of cardio-pulmonary failure. During a period of disease stability, a patient may experience a cardio- pulmonary event and die suddenly or experience a gradual loss of consciousness (due to increased CO2 levels and/or organ failure) and die over a period of days or hours.

Signs and Symptoms

The following symptoms and signs should be assessed and documented frequently in order to determine disease status and progression.

Dyspnea: an uncomfortable awareness of breathing that is inappropriate to the circumstances. Only the patient can report dyspnea. It is helpful to document the degree to which this symptom is causing distress by asking a patient to rate its severity. A 0-10 verbal scale such as that used in measuring pain intensity can be used.

Degree of dyspnea/degree to which dyspnea decreases functionality:

- With activity
- With minimal exertion
- At rest
- Response to bronchodilators: Functionality related to ADL's

Palliative Care

Pharmacological and non-pharmacological interventions should focus on symptomatic relief, prevention of complications, maintaining maximum function and optimal quality of life. Psychological and spiritual support is also needed to assist patients and their families who often experience fear, anxiety and depression.

Pharmacological treatment of pulmonary disease includes:

Bronchodilators: Bronchodilators dilate the bronchi and bronchioles through relaxation of the smooth muscles resulting in decreased airway resistance and increased airflow. Examples of bronchodilators include Albuterol (Proventil),

Isoproterenol, Ipratropiam (Atrovent), Ipratropium, Albuterol (Combivent) and Theophylline.
Corticosteroids: Corticosteroids act in the inflammatory cascade and can improve airway function. They can be combined with bronchodilators in a single inhaler. Some of the more common inhaled steroids are Beclomethasone (QVAR), Mometasone (Asmanex), Fluticasone (Flovent) and Salmeterol combined with Fluticasone (Advair).

Oxygen

The goals of oxygen therapy are to reduce the symptom of dyspnea or hypoxia. Signs and symptoms of hypoxia can include:

- Headaches
- Fatigue
- Shortness of breath
- Nausea
- Cyanosis
- Restlessness
- Irritability

Documentation

Document the following signs and symptoms:

- Weight loss
- Abnormally rapid or deep breathing (these cannot be equated with the subjective sensation)
- Cyanosis of lips and fingertips
- Pulmonary Hyperinflation -- barrel-chested
- Pursed-lip breathing
- Use of accessory muscles for respiration
- Supraclavicular retractions
- Increased expiratory phase – slow, forced expiration
- Wheezing -- note location
- Diminished breath sounds -- note location
- Depressed diaphragm

Other symptoms include:

- Housebound or chair/bedbound

- Oxygen-dependent
- Copius/purulent sputum (describe appearance and amount)
- Recurrent and/or frequent infections
- Severe cough
- Persistent symptoms despite medical management with bronchodilators
- Recurring acute respiratory episodes
- Visits to emergency room/hospitalizations
- Hospitalizations for pulmonary infections/respiratory failure
- Unintentional progressive weight loss of greater than 10% over preceding 6 months -- document weight to show progressive loss
- Hypoxemia at rest on supplemental oxygen (pO2 < 55 mmHG by ABG or O2 sat <88% on room air
- Hypercapnia (pCO2 .50 mmHg)
- FEV1 < 30%
- Heart rate -- resting tachycardia (>100 per minute) should be noted
- A number of other tests may be used to determine extent/progression of disease. These may include echocardiogram, EKG, chest x-ray and blood gases. If these tests are performed, results should be obtained and documented in the patient's record.

Documentation Tips

Document all signs and symptoms affecting physical function including onset of disease and changes over time. Include information relating the psychosocial and spiritual needs and interventions which impact the overall quality of life.

References

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