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CHRONIC RESPIRATORY DISEASES

What are Chronic Respiratory Diseases?

- ❖ Chronic respiratory diseases (CRDs) are long-term conditions that affect the lungs and airways, resulting in persistent or recurrent respiratory symptoms.
- ❖ CRDs are not curable, however, various forms of treatment (trachea/nose oxygen tubes, steroidal treatment/asthma inhalers) that help dilate major air passages and improve shortness of breath can help control symptoms and increase the quality of life for people with the disease.
- ❖ These diseases often involve inflammation, obstruction, or structural damage to the airways or lung tissue.
- ❖

Common chronic respiratory diseases include:

1. Chronic Obstructive Pulmonary Disease (COPD)
2. Asthma
3. Interstitial Lung Diseases (ILD)
4. Cystic Fibrosis
5. Bronchiectasis
6. Pulmonary Hypertension
7. Obstructive Sleep Apnea (OSA)
8. Bronchiolitis Obliterans
9. Chronic Bronchitis
10. Emphysema
11. Bronchiolitis
12. Occupational Lung Diseases (e.g., Coal Worker's Pneumoconiosis, Silicosis)
13. Pleural Effusion
14. Lung Cancer (in advanced stages)

1. Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease (COPD) is a common lung disease causing restricted airflow and breathing problems. It is sometimes called emphysema or chronic bronchitis.

In people with COPD, the lungs can get damaged or clogged with phlegm.

Symptoms:

- Chronic cough
- Excessive sputum production
- Shortness of breath
- Wheezing
- Chest tightness

Stages:

- Mild: occasional symptoms
- Moderate: increased symptoms with exertion
- Severe: daily symptoms affecting quality of life
- Very severe: severe airflow limitation, respiratory failure

Contributing Factors:

- Smoking
- Environmental pollutants
- Genetic predisposition

- Respiratory infections

Treatment:
- Bronchodilators
- Corticosteroids
- Oxygen therapy
- Pulmonary rehabilitation
- Surgery (in severe cases)

2. Asthma:

Asthma is a chronic lung disease affecting people of all ages. It is caused by inflammation and muscle tightening around the airways, which makes it harder to breathe

Symptoms:
- Wheezing
- Shortness of breath
- Chest tightness
- Coughing (especially at night)

Stages:
- Intermittent
- Mild persistent
- Moderate persistent
- Severe persistent

Contributing Factors:
- Genetic predisposition
- Environmental factors
- Respiratory infections
- Exercise
- Emotional stress

Treatment:
- Bronchodilators
- Inhaled corticosteroids
- Leukotriene modifiers
- Immunotherapy
- Rescue inhalers

3. Interstitial Lung Diseases (ILD)

Interstitial lung disease may be caused by long-term exposure to hazardous materials, such as asbestos or coal dust, or it can be caused by an auto-immune disease such as rheumatoid arthritis.

Symptoms:
- Shortness of breath
- Dry cough
- Fatigue
- Weight loss
- Chest pain
- Clubbing of fingers
- Crackling sounds in the lungs

Contributing Factors:
- Environmental pollutants
- Autoimmune disorders

- Infections
- Medications
- Genetic factors

Treatment:
- Corticosteroids
- Immunosuppressive drugs
- Oxygen therapy
- Pulmonary rehabilitation
- Lung transplant (in severe cases)

4. Cystic Fibrosis:

Cystic fibrosis affects the cells that produce mucus, sweat and digestive juices. It causes these fluids to become thick and sticky. They then plug up tubes, ducts and passageways.

Symptoms:
- Persistent cough with thick mucus
- Frequent lung infections
- Wheezing
- Shortness of breath
- Poor growth
- Salty-tasting skin
- Digestive issues

Contributing Factors:
- Genetic mutation in CFTR gene

Treatment:
- Airway clearance techniques
- Mucus-thinning medications
- Antibiotics
- Pancreatic enzyme supplements
- Lung transplantation (in severe cases)

5. Bronchiectasis:

A condition in which the lungs' airways become damaged, making it hard to clear mucus.

Bronchiectasis may result from an infection or medical condition, such as pneumonia or cystic fibrosis. Mucus builds up and breeds bacteria, causing frequent infections.

Symptoms:
- Chronic cough
- Excessive mucus production
- Recurrent respiratory infections

Contributing Factors:
- Recurrent infections
- Inflammation
- Genetic factors

Treatment:
- Antibiotics
- Airway clearance techniques
- Bronchodilators
- Surgery (in severe cases)

6. Pulmonary Hypertension:

A type of high blood pressure that affects arteries in the lungs and in the heart. Pulmonary hypertension affects arteries in the lungs and the right side of the heart.

Symptoms:

- Shortness of breath
- Fatigue
- Chest pain
- Fainting

Contributing Factors:

- Underlying conditions affecting pulmonary arteries

Treatment:

- Medications (e.g., vasodilators)
- Oxygen therapy
- Lung transplantation (in severe cases)

7. Obstructive Sleep Apnoea (OSA):

Intermittent airflow blockage during sleep.

Obstructive sleep apnoea is seen in all age groups, but the frequency increases with age and obesity.

Symptoms:

- Loud snoring
- Choking or gasping during sleep
- Daytime sleepiness
- Morning headaches

Contributing Factors:

- Partial or complete upper airway obstruction during sleep

Treatment:

- CPAP therapy
- Oral appliances
- Surgery (in some cases)

8. Bronchiolitis Obliterans:

Obliterans bronchiolitis (OB) is a condition characterized by inflammation and fibrosis of the bronchiolar walls resulting in narrowing or obliteration of the bronchiolar lumen.

Symptoms:

- Cough
- Shortness of breath
- Wheezing

Contributing Factors:

- Exposure to certain chemicals, toxins, or respiratory infections

Treatment:

- Corticosteroids
- Immunosuppressive drugs
- Supportive care

Certainly, here are detailed explanations for each of the specified respiratory diseases:

9. Chronic Bronchitis:

Chronic bronchitis is inflammation (swelling) and irritation of the bronchial tubes. These tubes are the airways that carry air to and from the air sacs in your lungs. The irritation of the tubes causes mucus to build up. This mucus and the swelling of the tubes make it harder for your lungs to move oxygen in and carbon dioxide out of your body.

Symptoms

-Persistent cough with mucus,
-Wheezing
-Shortness of breath.

Stage

-Not typically classified into stages.

Contributing Factors:

-Smoking
- Long-term exposure to lung irritants.

Treatment:

-Smoking cessation
-Bronchodilators
-Mucolytic medications.

10. Emphysema:

A condition in which the air sacs of the lungs are damaged and enlarged, causing breathlessness.

Symptoms:

-Shortness of breath
- Chronic cough
- Barrel chest.

Stage:

Mild, moderate, severe

Contributing Factors:

-Smoking,
-Long-term exposure to lung irritants.

Treatment:

-Smoking cessation
-Bronchodilator
-Pulmonary rehabilitation.

11. Bronchiolitis:

Bronchiolitis is swelling and mucus buildup in the smallest air passages in the lungs (bronchioles). It is usually due to a viral infection.

Symptoms:

-Cough
-Wheezing,
-Difficulty breathing, fever (common in infants).

Stages:

-Severity varies, especially in infants and young children.
- Respiratory syncytial virus (RSV), other viruses.

Treatment:

-Supportive care, such as hydration, humidified air, and in severe cases.
-Hospitalization.

12. Occupational Lung Diseases (e.g., Coal Worker's Pneumoconiosis, Silicosis):

Occupational or work-related lung diseases are lung conditions that have been caused or made worse by long-term exposure to certain irritants in the workplace

Symptoms:

-Vary based on the specific disease (e.g., cough, shortness of breath, chest pain).

Stages:

-Varies based on the specific disease.

Contributing Factors:

-Occupational exposures (e.g., coal dust, silica).

Treatment:

-Avoidance of further exposure, supportive care, sometimes medications.

13. Pleural Effusion:

A build-up of fluid between the tissues that line the lungs and the chest. Fluid can accumulate around the lungs due to poor pumping by the heart or by inflammation.

Symptoms:

- Shortness of breath
- Chest pain
- Dry cough
- Hiccups.

Stages:

-Not typically classified into stages.

Contributing Factors:

-Infections
-Congestive heart failure
-Liver disease
-Cancer.

Treatment:

-Thoracentesis (draining fluid from the chest) medications (diuretics, antibiotics)
-Pleurodesis (inducing adhesion between the layers of the pleura).

14. Lung Cancer (in advanced stages):

Lung cancer is a type of cancer that starts when abnormal cells grow in an uncontrolled way in the lungs. It is a serious health issue that can cause severe harm and death

Symptoms:

-Persistent cough
-Coughing up blood
-Chest pain
Shortness of breath
Unintentional weight loss.

Stages:

- Stages range from 0 (early, non-invasive) to IV (advanced)

Contributing Factors:

-Smoking
-Exposure to radon gas
-Asbestos

-Second-hand smoke
-Family history.

Treatment:

-Treatment options depend on the stage and type of lung cancer and may include surgery, chemotherapy, radiation therapy, targeted therapy, and immunotherapy.

Impacts of Chronic respiratory diseases

- Chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD), asthma, and bronchiectasis, have significant impacts on individuals and society.
- These conditions can lead to persistent breathing difficulties, reduced lung function, decreased quality of life, and increased healthcare costs.
-People with chronic respiratory diseases often experience symptoms like shortness of breath, coughing, wheezing, and chest tightness, which can limit their ability to perform daily activities and lead to frequent hospitalizations.

Role of government towards Chronic Respiratory Diseases

- Governments play a crucial role in addressing chronic respiratory diseases through public health policies, education, and healthcare infrastructure:
- Implementing smoking cessation programs and tobacco control policies.
- Regulating air quality standards and reducing exposure to environmental pollutants.
- Funding research for better understanding and management of chronic respiratory diseases.
- Providing access to affordable healthcare services, including diagnosis, treatment, and rehabilitation programs.
- Supporting public awareness campaigns to promote healthy lifestyles and early detection of respiratory conditions.