

# DISEASES OF THE RESPIRATORY SYSTEM AND MANAGEMENT

## Definition:

The respiratory system includes the lungs, airways, and breathing muscles. Diseases of the respiratory system are conditions that affect breathing or the exchange of oxygen and carbon dioxide.

## Common Cold (Viral Rhinitis)

- Cause: Viral infection (Rhinovirus, Coronavirus)
- Symptoms: Runny nose, sneezing, mild fever, sore throat
- Management: Rest, hydration, symptomatic treatment, avoid antibiotics unless secondary infection

## Influenza (Flu)

- Cause: Influenza virus
- Symptoms: Fever, chills, cough, body aches, fatigue
- Management: Antiviral drugs (Oseltamivir), symptomatic treatment, vaccination for prevention

## Pneumonia

- Cause: Bacterial, viral, or fungal infection
- Symptoms: Cough, fever, chest pain, shortness of breath
- Management: Antibiotics (bacterial), oxygen therapy, supportive care, hospitalization if severe

## Tuberculosis (TB)

- Cause: *Mycobacterium tuberculosis*
- Symptoms: Chronic cough, hemoptysis, night sweats, weight loss
- Management: Anti-tubercular therapy (6–9 months), isolation in early phase, nutritional support

## Asthma

- Cause: Chronic airway inflammation triggered by allergens, infections, or stress
- Symptoms: Wheezing, coughing, shortness of breath, chest tightness
- Management: Inhaled bronchodilators (Salbutamol), inhaled corticosteroids, avoid triggers, monitor peak flow

## Chronic Obstructive Pulmonary Disease (COPD)

- Cause: Long-term exposure to smoke, pollutants, chronic bronchitis, emphysema
- Symptoms: Chronic cough, sputum production, dyspnea
- Management: Bronchodilators, corticosteroids for exacerbations, oxygen therapy, smoking cessation, pulmonary rehabilitation

## Bronchitis

- Cause: Viral or bacterial infection, smoking
- Symptoms: Persistent cough, mucus, mild fever
- Management: Symptomatic treatment, antibiotics only for bacterial infection, avoid smoking

## Lung Cancer

- Cause: Smoking, environmental toxins, genetic factors

- Symptoms: Persistent cough, hemoptysis, weight loss, chest pain
- Management: Surgery, chemotherapy/radiotherapy, palliative care

## **Pulmonary Embolism**

- Cause: Blood clot in pulmonary arteries
- Symptoms: Sudden dyspnea, chest pain, tachycardia, hemoptysis
- Management: Anticoagulants, oxygen therapy, thrombolysis in severe cases

## **COVID-19 (Coronavirus Disease)**

- Cause: SARS-CoV-2 virus
- Symptoms: Fever, cough, shortness of breath, fatigue, loss of taste/smell
- Management: Oxygen therapy for hypoxia, antivirals & corticosteroids if severe, supportive care, isolation, vaccination

## **General Management Principles:**

- Maintain airway patency
- Ensure oxygenation (oxygen therapy if needed)
- Administer medications as per cause (antibiotics, antivirals, bronchodilators)
- Physiotherapy: Breathing exercises, chest physiotherapy
- Lifestyle measures: Avoid smoking, pollutants, allergens
- Vaccination: Influenza, Pneumococcal, COVID-19

## **Prevention of Respiratory Diseases:**

- Hand hygiene & masks to prevent infections
- Vaccination programs
- Avoid exposure to pollutants, smoke, and allergens
- Healthy lifestyle and nutrition
- Early medical consultation for persistent symptoms

## **Short Exam Notes:**

- Viral: Cold, Flu, COVID-19
- Bacterial: Pneumonia, TB
- Chronic: Asthma, COPD, Bronchitis
- Severe: Pulmonary embolism, Lung cancer
- Management = Airway + Oxygen + Cause-specific treatment + Supportive care