

Figure(1):Mechanism of Anti-GBM glomerulonephritis

## Diagnosis

### 1. Renal involvement includes

- Gross or microscopic hematuria, proteinuria, a decreased 24-hour creatinine clearance, and elevated blood urea and serum creatinine levels.
- Abnormally shaped RBCs and casts can be found in the urine sediment.

2. In those patients with pulmonary involvement, decreased total lung capacity and increased uptake of carbon monoxide is evident. An iron deficiency anemia with decreased hemoglobin and hematocrit can develop if pulmonary hemorrhage is severe.

3. The ESR and CRP level may be normal or increased.

4. Circulating antibodies to the GBM (anti - GBM ) glomerular basement membrane can be detected in about 87% of patients. These antibodies can be identified by IIF, ELISA, or Western blot.

## Lecture No. 17

### Respiratory disease

#### Drug-Induced Pulmonary Disease

Drug-induced pulmonary disease is lung disease brought on by a bad reaction to a medicine. Pulmonary means related to the lungs.

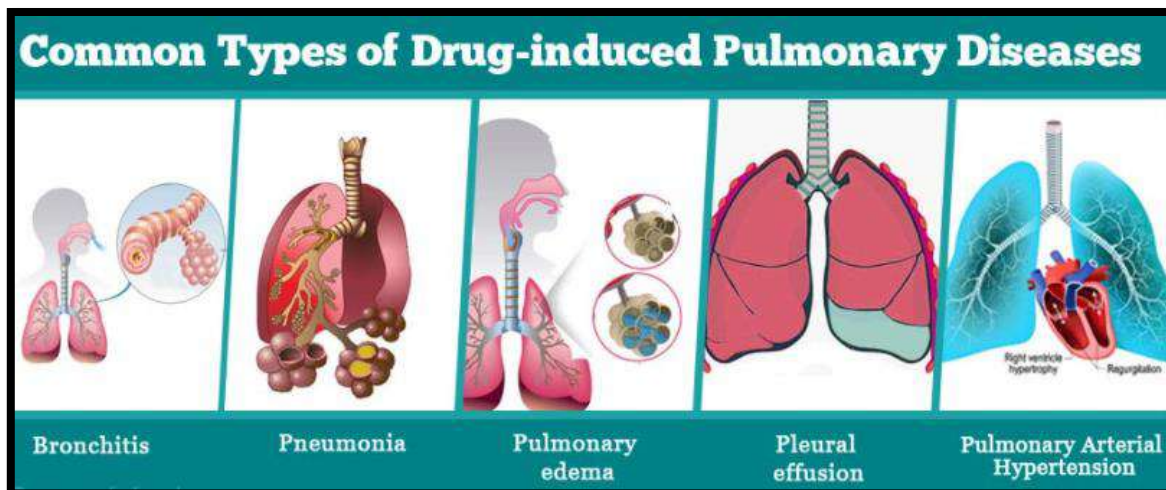
**What is the most common drug-induced respiratory problem?**

**Interstitial pneumonitis** (ie, inflammation of the lung interstitium, such as the alveolar septa) is the most common manifestation of drug-induced lung disease.

#### The Common Types of Drug-induced Pulmonary Diseases

**There are different types of lung or pulmonary diseases caused by drugs are:**

1. **Allergic reactions** like **asthma**, **hypersensitivity pneumonitis**, or **eosinophilic pneumoni**
2. **-Lymph node swelling**
3. **Alveolar haemorrhage**, i.e. bleeding into lung sacs .
4. **Bronchitis**, i.e., inflammation of the airways .
5. **Pneumonia**
6. **Pulmonary edema**, i.e., fluid accumulation in the lungs .
7. **Pleural effusion** i.e., fluid accumulation around the lungs .
8. **Pulmonary fibrosis** i.e., formation of scar tissue in the lungs .
9. **Pulmonary arterial hypertension** i.e defined as a mean **pulmonary arterial pressure greater than 25 mm Hg at rest** or greater than **30 mm Hg during exercise** .
- 10- **Lung failure.**



**Many medicines and substances are known to cause lung disease in some people.**

**These include:**

- **Antibiotics**, such as **nitrofurantoin** and **sulfa** drugs
- **Heart medicines**, such as **amiodarone**
- **Chemotherapy** drugs such as **bleomycin**, **cyclophosphamide**, and **methotrexate**
- **Street drugs**

**Symptoms**

Symptoms may include any of the following:

- **Bloody sputum**
- **Chest pain**
- **Cough**
- **Fever**
- **Shortness of breath**

- Wheezing

## **Diagnosis of Drug-induced Pulmonary Diseases**

It has always been a challenge for pulmonologists to diagnose drug-induced pulmonary disease. The medications can cause reactions in varied forms, which makes it difficult for pulmonologists to identify the drug or its reaction.

**Tests that could detect changes in the lungs include the following:**

1. **Imaging tests like chest x-ray and chest CT scan .**
2. **Lung function tests** : The primary purpose of pulmonary function testing is to identify the severity of pulmonary impairment. The tests measure **lung volume, capacity, rates of flow, and gas exchange.**
3. **Bronchoscopy** : is a procedure to look directly at the airways in the lungs using a thin, lighted tube (bronchoscope). The bronchoscope is put in the nose or mouth. It is moved down the throat and windpipe (trachea), and into the airways .
4. **Blood tests to rule out SLE-like reactions as a cause of the lung disease**
5. **Lung Biopsy, in rare cases**

## **Lecture No. 18**

### **Eosinophilic Pneumonia**

**Chronic eosinophilic pneumonia (CEP)** is an idiopathic disorder characterized by an abnormal and marked accumulation of eosinophils in the interstitium and alveolar spaces of the lung causing inflammation and damage. Causes include smoking, allergic reactions and parasitic infections. EP may occur suddenly or worsen slowly.

**What are the types of eosinophilic pneumonia?**

**There are three main types of eosinophilic pneumonia. They include:**

- **Acute eosinophilic pneumonia:** This type worsens quickly as your blood oxygen level falls. Most patients with AEP completely recover with treatment.
- **Chronic eosinophilic pneumonia:** This type worsens slowly, over days or weeks. If untreated, it may persist over weeks or months and result in severe symptoms.
- **Löffler syndrome (simple pulmonary eosinophilic, or SPE):** This form of eosinophilic pneumonia may cause no symptoms or only mild symptoms such as a dry cough. Löffler syndrome occurs due to a parasitic infection (roundworms). With treatment, the condition typically resolves within one month.

### **Causes of Eosinophilic pneumonia**

Eosinophilic pneumonia has many causes, both infectious and noninfectious. But healthcare providers don't always know the exact cause.