

# **Eosinophilic Pneumonia**

## **Definition**

Eosinophilic pneumonia depends on clinical context. In pathology, eosinophilic pneumonia refers to a histologic pattern of diffuse pulmonary infiltrates that contain prominent numbers of eosinophils. Distinguishing the histologic pattern of eosinophilic pneumonia from clinical syndromes that also contain the term eosinophilic pneumonia (eg, chronic eosinophilic pneumonia, tropical pulmonary eosinophilia, simple eosinophilic pneumonia, acute eosinophilic pneumonia) is important

## **Symptoms**

Most types of eosinophilic pneumonia have similar signs and symptoms. Prominent and nearly universal signs and symptoms include cough, fever, difficulty breathing, and night sweats. Acute eosinophilic pneumonia typically follows a rapid course. Fever and cough may develop only one or two weeks before breathing difficulties progress to the point of respiratory failure requiring mechanical ventilation

### **Acute and Chronic Eosinophilic Pneumonia**

The causes for both acute and chronic eosinophilic pneumonia are unknown . There is some suspicion that at least the acute form is the result of the body's response to some unidentified environmental agent

## **Pathophysiology**

Eosinophilic pneumonia can develop in several different ways depending on the underlying cause of the disease. Eosinophils play a central role in defending the body against infection by parasites. Many diseases, such as asthma and eczema, are caused when eosinophils overreact to environmental triggers and release an excess of chemicals, e.g., cytokines and histamine. The common characteristic among different causes of eosinophilic pneumonia is eosinophil overreaction or dysfunction in the lungs.

## **Diagnosis**

Eosinophilic pneumonia is diagnosed in one of three circumstances: when a complete blood count reveals increased eosinophils and a chest X-ray or computed tomography identifies abnormalities in the lungs, when a biopsy identifies increased eosinophils in lung tissue, or when increased eosinophils are found in fluid obtained by a bronchoscopy (bronchoalveolar lavage fluid). Association with medication or cancer is usually apparent after review of a person's medical history. Specific parasitic infections are diagnosed after examining a person's exposure to common parasites and performing laboratory tests to look for likely causes. If no underlying cause is found, a diagnosis of acute or chronic eosinophilic pneumonia is made based upon the following criteria. Acute eosinophilic pneumonia is most likely with

respiratory failure after an acute febrile illness of usually less than one week, changes in multiple areas and fluid in the area surrounding the

lungs on a chest X-ray, and eosinophils comprising more than 25% of white blood cells in fluid obtained by bronchoalveolar lavage. Other typical laboratory abnormalities include an elevated white blood cell count, erythrocyte sedimentation rate, and immunoglobulin G level. Pulmonary function testing usually reveals a restrictive process with reduced diffusion capacity for carbon monoxide. Chronic eosinophilic pneumonia is most likely when the symptoms have been present for more than a month. Laboratory tests typical of chronic eosinophilic pneumonia include increased levels of eosinophils in the blood, a high erythrocyte sedimentation rate, iron deficiency anemia, and increased platelets. A chest X-ray can show abnormalities anywhere, but the most specific finding is increased shadow in the periphery of the lungs, away from the heart.

## **Treatment**

When eosinophilic pneumonia is related to an illness such as cancer or parasitic infection, treatment of the underlying cause is effective in resolving the lung disease. When due to acute or chronic eosinophilic pneumonia, however, treatment with corticosteroids results in a rapid, dramatic resolution of symptoms over the course of one or two days. Either intravenous methylprednisolone or oral prednisone are most commonly used. In acute eosinophilic pneumonia, treatment is usually continued for a month after symptoms disappear and the X-ray returns to normal (usually four weeks total). In chronic eosinophilic pneumonia