

Pulmonary Embolism Assessment

A pulmonary embolism (PE) occurs when a blood clot or fat/air embolus travels through the venous circulation and becomes lodged in the pulmonary vasculature. The embolus will eventually block circulation to the alveoli of the lungs, disrupting gas exchange. Patients with this condition will present with sudden onset of shortness of breath, tachypnea, chest pain, hemoptysis, and hypoxemia. Unless diagnosed and treated accordingly, patients with a PE may suffer sudden death within the first hour.



PLAY PICMONIC

Assessment

Shortness of Breath (SOB)

[S.O.B.](#)

Patients who develop a PE will present with sudden onset shortness of breath. This change in condition is due to the disruption of gas exchange in the lungs, related to impaired alveolar circulation.

Pleuritic Chest Pain

[Pearls causing Pain-bolt](#)

Pleuritic chest pain occurs when there is inflammation of the lining of the lungs (pleura). This type of pain typically occurs with breathing or coughing and is described as sharp pain.

Tachypnea

[Tac-P-lungs](#)

Patients with a PE will begin to breathe rapidly in an attempt to improve oxygenation throughout the body and to compensate for their shortness of breath.

Hemoptysis

[Red-mop coughing blood](#)

Hemoptysis or coughing up blood can occur in these patients. The amount of blood present in the sputum can range from a few streaks of blood, to larger amounts of frank blood.

Hypoxemia

[Hippo-blood-O2](#)

Patients can experience hypoxemia or a low level of oxygen in the blood. This is due to impaired gas exchange in the lungs, related to obstruction of alveolar blood flow. Crackles and wheezing can be heard on chest auscultation, along with a sudden change in level of consciousness due to the hypoxemia.

Considerations

Sudden Death

Death of lungs

If left untreated, a pulmonary embolism can lead to sudden death, often within the first hour after onset. If a pulmonary embolism is suspected, patients may be treated with an anticoagulant or fibrinolytic medication to dissolve the clot and restore pulmonary circulation.