PULMONARY HYPERTENSION

Pulmonary hypertension occurs when there is abnormally high pressure in the blood vessels between the lungs and the heart.

Key Facts

- When the blood pressure in the pulmonary arteries gets too high, the arteries in the lungs narrow (or constrict), reducing blood flow through the lungs and causing low levels of oxygen in the blood.

- There are numerous causes of pulmonary hypertension, which can be familial or acquired as a result of other medical conditions such as heart disease, lung disease, or connective tissue disease. In many cases of pulmonary arterial hypertension, the cause is unknown.

- Pulmonary hypertension is treatable, but not curable, and can lead to heart failure.

What Is Pulmonary Hypertension?
Pulmonary hypertension is a serious condition characterized by higher than normal pressure in the blood vessels between the lungs and the heart. In the body of a healthy person, oxygen-poor blood returning to the heart from all body organs and tissues, travels from the right side of the heart through the pulmonary arteries into the lungs. Within the lungs, these arteries divide into smaller vessels in order to acquire oxygen and eliminate carbon dioxide. The oxygen-rich blood then returns to the left side of the heart from where it is pumped with freshly oxygenated blood back to all body organs and tissues. In pulmonary hypertension, the pressure of blood in the lungs is increased either because the blood vessels are narrowed (a lung problem), or because the pressure in the heart chamber to where the blood is pumped (left atrium) is increased (heart problem), backing the blood flow up into the lung. Long term, the right side of the heart must pump harder to get the blood through these vessels and through the lungs, potentially leading to heart failure.

Pulmonary hypertension is classified by the World Health Organization according to its causes or associated underlying conditions:

**Group 1:** Pulmonary arterial hypertension (PAH) refers to increased pressure in the vessels caused by obstruction in the small arteries in the lung, for a variety of reasons. These include idiopathic reasons (no identifiable cause or underlying contributing condition), drug-related causes, HIV infection, connective tissue/autoimmune disorders (such as sclerodema), and other reasons.
Group 2: Pulmonary hypertension due to left-sided heart disease (left heart failure, valve disease).

Group 3: Pulmonary hypertension due to lung diseases or hypoxemia (low blood oxygen conditions), emphysema/chronic obstructive pulmonary disease (COPD), pulmonary fibrosis/interstitial lung disease, obstructive sleep apnea, chronic high altitude exposure, and other reasons.

Group 4: CTEPH (chronic thromboembolic pulmonary hypertension)—blood clots in the lungs blocking blood flow.

Group 5: Pulmonary hypertension from numerous other potential metabolic, systemic, or hematologic disorders.

Regardless of the cause of pulmonary hypertension, blood flow through the lungs to the left side of the heart is reduced and the pressure inside the vessels increases. This may cause the blood vessel walls to thicken within the lungs and worsen, putting a strain on the heart to work harder to get the blood through.

For more information, please refer to Pulmonary Arterial Hypertension.

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