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An Introduction to Pulmonary Hypertension

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Description

Pulmonary hypertension is a form of high blood pressure that affects the arteries in the lungs as well as the right side of the heart. PAH is a type of pulmonary hypertension in which the blood arteries in the lungs become constricted, obstructed, or damaged. As a result of the injury, blood flow through the lungs slows and blood pressure in the pulmonary arteries rises. The heart must work harder to pump blood through the lungs. As a result of the increased effort, the heart muscle weakens and eventually fails [1]. Pulmonary hypertension develops slowly in some people and can be fatal. Although there is no cure for some types of pulmonary hypertension, therapy can help to alleviate symptoms and improve quality of life.

Symptoms

Pulmonary hypertension manifests itself in a gradual manner. It's possible that you won't see them for months or even years. As the condition progresses, the symptoms become more severe.

The following are some of the indications and symptoms of pulmonary hypertension:

Dyspnea (shortness of breath) that begins while exercising and progresses to rest; Fatigue; Symptoms of dizziness or fainting (syncope); Pain or pressure in the chest; Swelling of the ankles, legs, and eventually the abdomen (edoema) (ascites); Lips and skin are a bluish tint (cyanosis); A pounding heartbeat or a fast pulse (palpitations).

Causes

Two top chambers (atria) and two lower chambers make up a typical heart (ventricles). The lower right chamber (right ventricle) sends blood to the lungs through a big blood channel every time blood goes through the heart (pulmonary artery). The blood in the lungs releases carbon dioxide and takes up oxygen. Blood normally travels freely via the lungs' blood vessels (pulmonary arteries, capillaries, and veins) to the heart's left side. Changes in the cells that line the pulmonary arteries, on the other hand, can cause the arteries' walls to stiffen, swell, and thicken. Pulmonary hypertension is caused by alterations that slow or restrict blood flow through the lungs [2].

Depending on the cause, pulmonary hypertension is divided into five categories.

Group 1: Pulmonary Arterial Hypertension (PAH)

The following are some of the causes:

The reason is unknown (idiopathic pulmonary arterial hypertension); Changes in a gene that are passed down across generations (heritable pulmonary arterial hypertension); Use of prescribed diet medications or illegal substances like methamphetamine; Heart issues are prevalent from the start (congenital heart disease); HIV infection, cirrhosis (chronic liver illness), and connective tissue disorders are examples of additional ailments (scleroderma, lupus, others) [3].

Group 2: Left-sided cardiac disease causes pulmonary hypertension.

Left-sided heart valve disease, such as mitral valve or aortic valve disease, is among the causes; Failure of the lower left chamber of the heart (left ventricle)

Group 3: Pulmonary hypertension caused by lung disease

The following are some of the causes:

COPD stands for Chronic Obstructive Pulmonary Disease (COPD); Scarring of the tissue between the air sacs of the lungs (pulmonary fibrosis); Obstructive Sleep Apnea (OSA) is a type of sleep apnea that; Long-term exposure to high altitudes in those who are at risk of developing pulmonary hypertension [4].

Group 4: Pulmonary hypertension induced by persistent blood clots

Chronic blood clots in the lungs are one of the causes (pulmonary emboli); Other clotting conditions

Group 5: Pulmonary hypertension brought on by other illnesses

The following are some of the causes:

Polycythemia vera and essential thrombocythemia are two blood diseases. Sarcoidosis and vasculitis are examples of inflammatory diseases. Glycogen storage disease is one of the metabolic illnesses. Kidney disease is a condition that affects the kidneys; Tumors obstructing pulmonary arteries; Eisenmenger syndrome and pulmonary hypertension are two conditions that can occur together. Eisenmenger syndrome is a kind of pulmonary hypertension caused by a congenital cardiac defect. A huge hole in the heart between the two lower heart chambers (ventricles), known as a ventricular septal defect, is the most prevalent cause [5]. Because of the hole in the heart, blood flows in the heart wrongly. The oxygen-carrying blood (red blood) combines with the oxygen-depleted blood (blue blood) (blue blood). Instead of travelling to the rest of the body, the blood returns to the lungs, increasing the pressure in the pulmonary arteries and producing pulmonary hypertension.

Acknowledgement

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Conflict of Interest

None.

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