"Pulmonary Hypertension is a difficult diagnosis in patients with multiple other problems it is important to keep positive, low fluids and active lifestyle. Many newer therapies and advances can help give more quality and survival to patients"

CHEST CARE CLINIC, KHARGHAR

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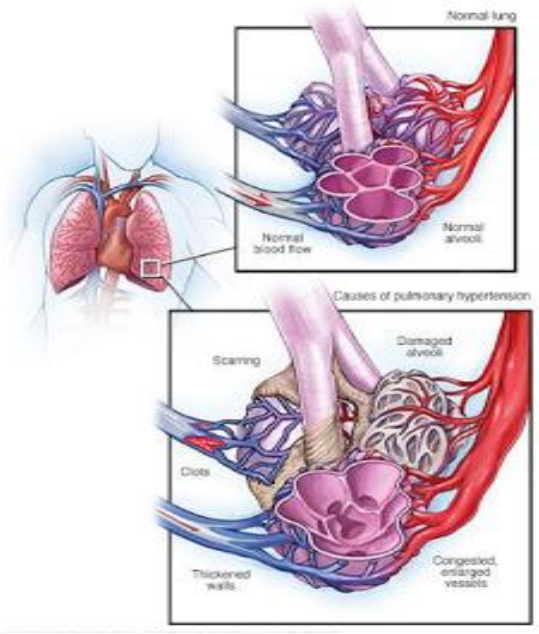
WHAT IS PULMONARY HYPERTENSION?



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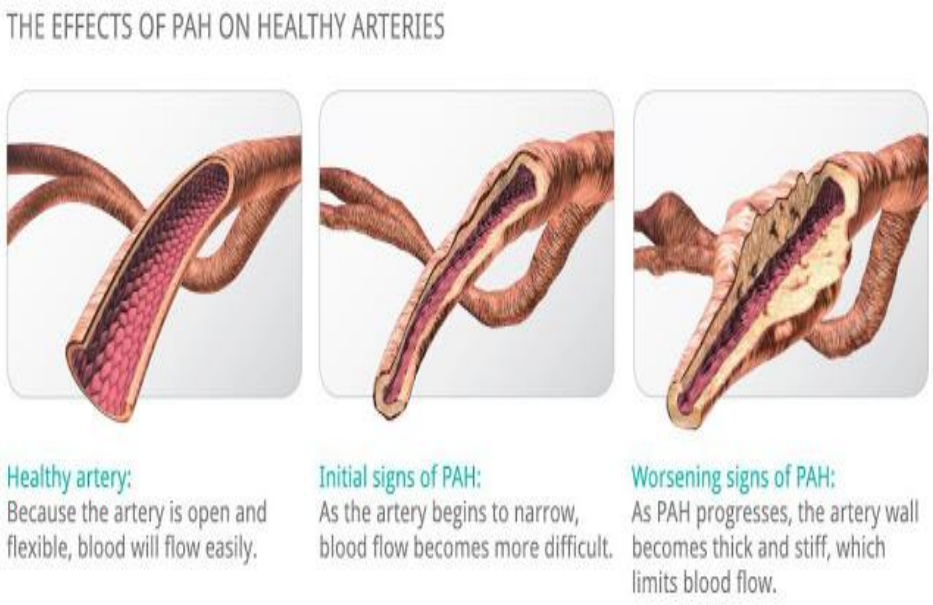
Pulmonary Hypertension is a The right side of your heart pumps blood that’s low in oxygen through the pulmonary arteries to your lungs. Here the blood picks up oxygen. The oxygen-rich blood is then pumped to the left side of your heart, which pumps it to the rest of your body. If you have pulmonary hypertension, the high blood pressure in your lungs means that the right side of your heart has to work harder to pump blood. Over time, the right side of your heart begins to struggle with this extra work. It can become weaker and pump less effectively. This causes the symptoms of pulmonary hypertension.



What are the symptoms of Pulmonary Hypertension?

The most common symptoms of pulmonary hypertension are:

1. Feeling short of breath.

2. Feeling tired.

3. Feeling dizzy or faint.

4. Chest pain, especially after exercise.

5. Racing or irregular heartbeat.

6. Leg, ankle and tummy swelling.

These symptoms may get worse when you exercise, or when you do activities like walking uphill or up the stairs.

What are Complications of Pulmonary Hypertension?

Pulmonary hypertension can lead to a number of complications, including:

Right-sided heart enlargement and heart failure (corpulmonale). In cor pulmonale, your heart's right ventricle becomes enlarged and has to pump harder than usual to move blood through narrowed or blocked pulmonary arteries. At first, the heart tries to compensate by thickening its walls and expanding the chamber of the right

ventricle to increase the amount of blood it can hold. But this thickening and enlarging works only temporarily, and eventually the right ventricle fails from the extra strain.

- **Blood clots-**Clots help stop bleeding after you've been injured. But sometimes clots form where they're not needed. A number of small clots or just a few large ones dislodge from these veins and travel to the lungs, leading to a form of pulmonary hypertension that can generally be reversible with time and treatment.

Having pulmonary hypertension makes it more likely to have clots in the small arteries in your lungs, which is dangerous if you already have narrowed or blocked blood vessels.

- **Arrhythmia-** Irregular heartbeats (arrhythmias) from the upper or lower chambers of the heart are complications of pulmonary hypertension. These can lead to palpitations, dizziness or fainting and can be fatal.

- **Bleeding-** Pulmonary hypertension can lead to bleeding into the lungs and coughing up blood (hemoptysis). This is another potentially fatal complication.

What are Risk factors for Pulmonary Hypertension?

Your risk of developing pulmonary hypertension may be greater if:

- You're a young adult, as idiopathic pulmonary arterial hypertension is more common in younger adults.
- You're overweight.
- You have a family history of the disease.
- You have one of various conditions that can increase your risk of developing pulmonary hypertension.
- You use illegal drugs, such as cocaine.
- You take certain appetite-suppressant medications.
- You have an existing risk of developing pulmonary hypertension, such as a family history of the condition, and you live at a high altitude.

Causes of pulmonary hypertension?

There are five main types of pulmonary hypertension:

Type 1: Pulmonary arterial hypertension (PAH) This type is rare. It's caused by changes to very small arteries which take blood from the right side of your heart to your lungs. The walls of the arteries get thicker and stiffer. This makes the space for blood to pass through narrower which increases the blood pressure.It can be genetically inherited. It's also associated with connective tissue diseases, liver disease, congenital heart defects, HIV and certain drugs.

Type 2: Pulmonary hypertension due to left heart disease
If there are problems with the left side of your heart, it can stop blood flowing easily through the lungs. The right side of your heart has to work harder to pump blood through your lungs. This increases the blood pressure in your pulmonary arteries. This is one of the most common causes of pulmonary hypertension.

Type 3: Pulmonary hypertension due to lung conditions or lack of oxygen
The common causes in this group are:

- Chronic obstructive pulmonary disease (COPD)
- Interstitial lung disease (such as pulmonary fibrosis)
- Obstructive sleep apnoea (OSA)

These conditions reduce the amount of oxygen getting into your lungs. When there's a low level of oxygen, your pulmonary arteries get narrower. This increases the blood pressure. This is another very common cause of pulmonary hypertension.

Type 4: Pulmonary hypertension due to blood clots (chronic thromboembolic pulmonary hypertension) When blood clots are carried into the pulmonary arteries, they can
sometimes form scars. The scars block the flow of blood and this increases the blood pressure.

Type 5: Pulmonary hypertension due to a range of causes This is a mixed group of rare causes. They're grouped together because their causes are less clear. Diagnosing pulmonary hypertension
Pulmonary hypertension can be difficult to diagnose, because the symptoms are similar to many other heart and lung conditions.

What are the tests for diagnosis for the pulmonary hypertension?

Echocardiogram
An echocardiogram, often called an echo, uses high-frequency sound waves to create an image of your heart. This can be used to estimate the pressure in your pulmonary arteries. It
can also test how well the right and if breathlessness improves.

Right heart catheterization
Other tests you might have are :
blood tests ,breathing tests,sleep studies
other types of scan.

These may include:
- a scan of your lungs to look for lung disease and blood clots
- a V/Q scan, which is a type of scan that looks for blood clots
- a scan to look at your liver
-exercise or walking tests.

What is the treatments for Pulmonary Hypertension?

Type 1: Pulmonary arterial hypertension (PAH) You'll usually have background therapy first – treatments to help with your symptoms.

Background therapy may include:

1. Diuretics: These remove excess fluid from your body. They treat symptoms like swollen ankles.
2. Oxygen therapy: In oxygen therapy, you breathe air with a higher concentration of oxygen than normal air. This increases your oxygen levels and improves your symptoms.
3. Anticoagulation: With some forms of PAH you have a greater risk of getting blood clots. Anticoagulant medicines like warfarin stop blood clots forming.
4. Pulmonary rehabilitation: This is a programme of gentle physical exercise and advice, which helps you cope with breathlessness. The classes are run by physiotherapists and specialist nurses.

Your health care professional may also offer you treatments called pulmonary vasodilators. These aim to lower the blood pressure in your lungs by relaxing and opening up the pulmonary arteries. With more space for the blood to pass through, the right side of your heart is under less strain and should work better.

Your health care professional will advise you:
- not to become pregnant.
- not to travel to high altitude. This includes avoiding high altitude destinations like mountains, as well as flying.
-to keep up to date with flu and pneumonia vaccinations.

Types 2 and 3: Pulmonary hypertension due to left heart disease or lung conditions

In both these cases pulmonary hypertension is a secondary condition. This means it's caused by another lung or heart condition, which is the primary condition. If your pulmonary hypertension is a secondary condition, your health care professional will focus on treating the primary condition. If you get the best treatment for your primary condition, it should improve your pulmonary hypertension too.

In these cases, it's very unlikely that you'll be treated directly for pulmonary hypertension.

Type 4: Pulmonary hypertension due to blood clots (chronic thromboembolic pulmonary hypertension, CTEPH)

If your pulmonary hypertension is caused by blood clots, your health care professional will treat you with anticoagulant medicine. This medicine stops more blood clots from forming. The most common anticoagulant medicine is warfarin, which is taken as a tablet.
If your blood clot has caused scar tissue in your pulmonary arteries, you may be offered a pulmonary endarterectomy.

This is an operation to remove scar tissue from the inside layer of the pulmonary arteries. This improves the blood flow and reduces the pressure inside the arteries. This is a specialist operation and is only performed at special centers.

If you're not suitable for surgery or you still have some pulmonary hypertension after the operation,

you may be given tablets called pulmonary vasodilators. These help to open up narrowed pulmonary arteries.

Type 5: Pulmonary hypertension due to a range of causes
Because pulmonary hypertension in this group is caused by arange of different factors, there's no standardised treatment. Your health care professional will decide the best treatment for you, which may include some of the treatments above.

Lung transplant

If your pulmonary hypertension doesn't respond to treatment, a lung transplant might be an option. This is a very rare procedure and not everyone is suitable for a lung transplant. Factors such as age and other medical problems would be considered, as well as the suitability of donors. n look for a cause and treat it.