Kidneys & Kidney Failure 6

High Blood Pressure & Kidney Failure

This booklet will help you to know about kidneys & their functions, hypertension, correlation between kidneys and high blood pressure, how high blood pressure damages the kidneys and drugs being given to treat patients with hypertension.

iRf

The kidneys are two bean shaped organs, placed behind the stomach on either side of the vertebral column.

Each kidney is capable of sustaining life independently. In other words, a person can lead a normal life even with one kidney. Kidneys are a part of the urinary system which also consists of the ureters, urinary bladder and the urethra.

Kidneys are the chief excretory organs with the help of which body excretes waste products. Besides these, kidneys perform other important functions also which are regulation of the production of red blood cells, balancing the body fluids, controlling blood pressure and keeping bones healthy.

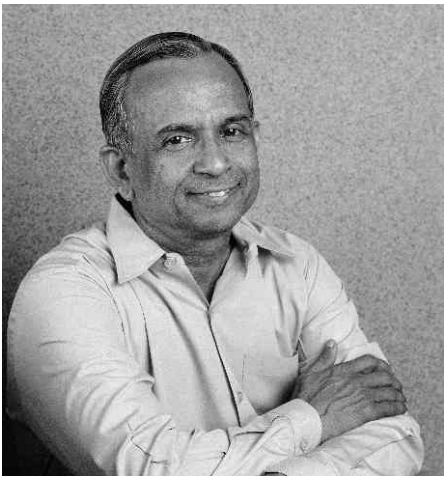
What is 'Blood Pressure'?

'Blood pressure' can be defined as the pressure or force that is applied against the artery walls by the blood as it flows through the circulatory system. It is recorded as a measurement of this force in relation to the heart's pumping activity, and is measured in millimeters of mercury (mm Hg).

The top number, or systolic pressure, is the measurement of the pressure that is attained when the heart contracts or beats. The bottom number, or diastolic pressure, is the measurement recorded between beats, while the heart is at rest.

What is Hypertension?

High Blood Pressure is also known as Hypertension. Hypertension is an indicator that the force required for blood flow is greater than normal. A blood pressure measurement of less than 130/85 is considered "normal", while 130-140/85-90 is defined as "high normal". When repeated measurements show a systolic pressure greater than 140 and diastolic pressure greater than 90, or both, it



is considered as Hypertension.

Primary Hypertension

Primary or essential hypertension has no known cause; however, certain lifestyle factors such as body weight and salt intake are involved. 95% of persons diagnosed with hypertension fall into this category.

Secondary Hypertension

Secondary hypertension is high blood pressure secondary to specific medical illness, often related to a change in hormone secretion or kidney function. In secondary hypertension, a specific medical reason for the increased blood pressure can be identified and possibly corrected.

Causes

The causes of high blood pressure are not known in many cases. However, some people may have a greater likelihood of developing high blood pressure. These include:

1. Old people
2. People who have a family history of high blood pressure
3. People who are overweight
4. People who use a lot of salt in their food
5. Women who use oral contraceptives (the pill)

6. People who have diabetes

Men are more likely to develop high blood pressure than women.

Kidney disease

Secondary hypertension related to kidney (renal) disease is called renal hypertension. It may be due to abnormalities in the way that the kidneys handle sodium and fluids, or it may be triggered by kidney chemicals which make the arteries narrower.

Adrenal disease

Adrenal glands are situated on the top of each kidney. The abnormal functioning of these glands can also cause high blood pressure.

Hyperparathyroidism

Parathyroid glands are situated near the thyroid glands in the neck area. Hyperparathyroidism means abnormally high levels of hormones produced by the parathyroid gland. Due to this, amount of calcium in the blood increases which may raise blood pressure.

High Blood Pressure & Kidneys

High blood pressure is one of the most common problems that can severely harm the kidneys. Severe high blood pressure causes kidney malfunction over a relatively short period of time. But even mild forms of high blood pressure can damage kidneys over several years, with no symptoms evident until severe damage has already taken place .

High blood pressure and kidney disease are closely related. Uncontrolled or poorly controlled high blood pressure is the primary diagnosis for about 25% of patients who have chronic kidney failure. It is second only to Diabetes as the leading cause of End Stage Renal Disease.

How does high blood pressure damage the kidney?

As blood flows through arteries and veins, it creates pressure on the walls of blood vessels. Extra fluid in the body increases the volume of blood and makes blood pressure higher. Narrow or clogged blood vessels also raise blood pressure.

High blood pressure makes the heart work harder and over a period of time damages blood vessels throughout the body. If the blood vessels in the kidneys are damaged, the nephron getting nutrition from these blood vessels will die. Slowly a large number of nephrons die, the kidneys lose the capacity to perform their function, and kidney failure occurs.

How is high blood pressure treated?

If mild, high blood pressure may sometimes be brought under control by making changes to a healthier lifestyle such as losing weight, cutting down on fat and salt in diet, limiting alcohol intake, and starting a regular exercise program approved by a doctor.

If more severe, medicines may also be needed to get blood pressure under control. Many effective medicines are available to treat high blood pressure. Sometimes, a combination of different medicines may be needed. These medicines should be taken as prescribed by the doctor, even if feeling fine, because high blood pressure is just as damaging even when it causes no symptoms. If the patient is a smoker, the doctor will advise him to stop as it increases risk of complications such as heart attacks or strokes.

What are the major Anti-hypertensive medications available?

Diuretics, Central acting agents, Peripheral Vasodilators, Beta blockers and ACE inhibitors are some of the medications used for treatment of hypertension.

Key words:

Blood pressure, Hypertension, Primary hypertension, Secondary hypertension

Please also refer the following information booklets from India Renal Foundation for more information.

1. Choosing Your Treatment
2. Haemodialysis
3. Peritoneal Dialysis
4. Kidney Transplantation
5. Diabetes and Kidney Failure
6. Kidney Failure and Anemia
7. Kidney Stones and Kidney Failure

Publication of this booklet was done with the help of
JD Printers and Gajjar Scanna Pvt. Ltd., Ahmedabad.

Registration No. :- U85110GJ2002NPL40355

India Renal Foundation
60-61, A Wing, Nobles, Opp. Nehru Bridge, Ashram Road,
Ahmedabad 380 009, India.
Ph:+91-79-6584251 Fax :+91-79-6587042
Email: irf@indiarenalfoundation.org
visit us at: www.indiarenalfoundation.org