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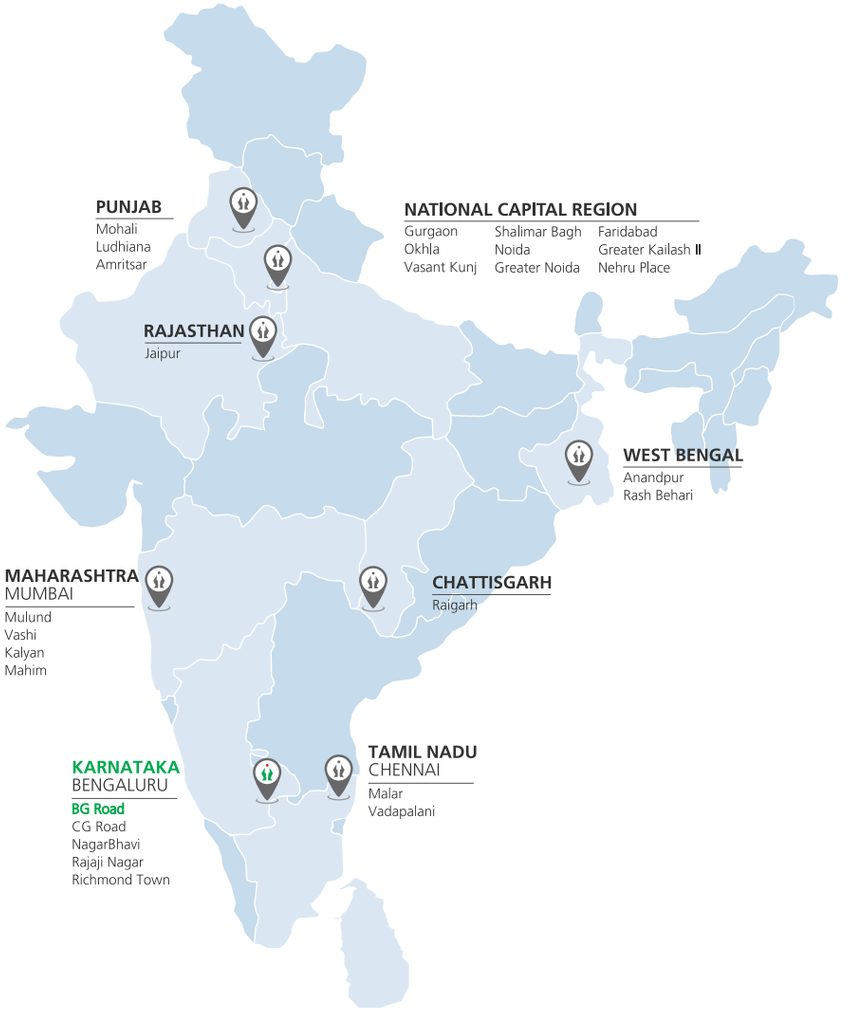

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NEPHROLOGY

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FREQUENTLY ASKED QUESTIONS

1 WHAT IS NEPHROLOGY?

Nephrology is **a branch of medical science that deals with diseases of the kidneys**. Nephrologists are physicians who specialize in diagnosing and treating kidney conditions. Nephrologists are also part of the kidney transplant team, taking care of the patient for pre-transplant optimization, and post-transplant management including immunosuppression and other medical aspects.

2 WHAT ARE THE KIDNEYS AND WHAT DO THEY DO?

The kidneys are bean-shaped organs about the size of your fist. They are located at either side of your spine near the middle of your back. Most people think the kidneys are only responsible for producing urine, but they have many important functions in your body:

- They remove waste products from the body
- They balance the body's fluids and electrolytes
- They release hormones that regulate blood pressure and control calcium metabolism
- They stimulate and control the production of red blood cells
- They produce an active form of Vitamin D that promotes healthy bones
- They provide critical regulation of the body's salt, potassium and acid content.

3 WHAT ARE THE SYMPTOMS OF KIDNEY DISEASE?

The warning signs of kidney disease are not always obvious, especially in the early stages. Here are some possible symptoms:

- Blood in the urine or urine that is foamy
- Fatigue
- Weight loss
- Ankle swelling or swelling around eyes
- Loss of appetite, nausea or vomiting
- Itching

4 WHAT CAUSES KIDNEY DISEASE?

The most common causes of kidney disease are hypertension and diabetes. These two diseases can affect every organ in the body. If not well controlled, either of these conditions can result in kidney failure and dialysis. Other diseases that attack multiple organs including the kidney are lupus, HIV and viral hepatitis. Other causes of kidney disease include kidney stones, urinary infections, and taking pain-killers.

5 WHAT IS GFR?

GFR stands for Glomerular Filtration Rate. It gives an estimate of the degree of kidney function. GFR is a very important value for all patients with CKD (Chronic Kidney Disease). Change in GFR is very crucial in the management of patients with CKD and therefore all patients should know their baseline GFR and stage of kidney disease.

6 HOW KIDNEY DISEASE CAN BE DIAGNOSED?

Several blood and urine screening tests can check for kidney damage and evaluate how well kidneys are working. Nephrologists use several sophisticated tests.

- Urine can reveal a great deal about the functioning of kidneys. Blood in the urine, called haematuria, can indicate kidney stones, a kidney injury or a urinary tract infection. Sometimes urinary protein is high, a condition called proteinuria or albuminuria. Larger amounts of protein in the urine can be a sign of early kidney disease. If not controlled, increased amounts of protein in the urine can lead to kidney damage.
- Blood tests can reveal the amount of waste products such as urea and creatinine in the blood that indicate kidney disease and its stage.
- The creatinine level in blood indicates how well the tiny filters in the kidneys are doing their job filtering out wastes.
- Nephrologists also use ultrasound to look at the size and shape of the kidneys. It is safe, painless and quick.

What one can do to protect his/her kidneys?

Progression of chronic kidney disease can be reduced to some extent with lifestyle changes such as:

- Controlling high blood pressure and blood sugar
- Eating a healthy diet with lower salt intake
- Losing weight

- Stopping smoking
- Exercising
- Avoiding certain medications
- Remaining well hydrated

As the disease progresses one may need dialysis or a kidney transplant.

7 WHAT DRUGS ARE HARMFUL TO THE KIDNEYS?

All drugs pass through the kidneys. In particular, pain medications, antibiotics, prescription laxatives and contrast dye can reduce blood flow to the organs. One has to make sure to follow the instructions of the healthcare provider to prevent injury to the kidneys. Alcohol and illegal substances can hurt the kidneys, as well.

8 HOW ONE CAN PROTECT HIS/HER KIDNEYS IF HE/SHE TAKES MEDICINES TO TREAT A HEALTH CONDITION?

- In case of a chronic pain, consult a doctor and do not use over-the-counter pain relievers for more than 10 days. The same is true if one has a fever for more than three days.
- Avoid prolonged use of analgesics that contain a mixture of ingredients like aspirin, acetaminophen and caffeine in one pill. If one is taking analgesics, avoid drinking alcohol and increase the amount of fluid to six to eight glasses per day. Consult the doctor before taking painkillers such as nonsteroidal anti-inflammatory drugs (NSAIDs) or higher-dose aspirin if he/she suffers from kidney disease.
- Make sure that doctor is aware of all the medicines one is taking, including over-the-counter medications. Getting blood tests during an annual health check may also assist the doctor in determining if he/she is suffering from kidney disease or not.

9 IS THERE ANY SPECIAL DIET THAT IS GOOD FOR THE KIDNEYS?

Doctors often recommend a diet low in protein to help preserve kidney function, or a low-sodium diet to help lower blood pressure. If one has weak kidneys talk to the doctor before starting any diet.

10 IS KIDNEY DISEASE HEREDITARY?

Genetic factors can contribute to kidney disease and around 10% of kidney failures are caused by hereditary factors.

11 DO KIDNEY STONES LEAD TO KIDNEY DISEASE?

Long term obstruction of the kidney due to kidney stones can cause kidney failure.

12 IS DRINKING A LOT OF WATER GOOD FOR THE KIDNEYS?

Despite widespread belief, there is no evidence that drinking 8 glasses of water is good for the kidneys. The one exception is patients who have recurrent kidney stones. In this case, drinking water is among the most effective therapies to prevent the recurrence of kidney stones.

13 IF ONE GOES TO THE BATHROOM OFTEN; DOES THAT MEAN HIS/HER KIDNEYS ARE FAILING?

Not necessarily. It could be a bladder rather than a kidney problem. When the kidneys make urine, it flows down a tube called the ureter and empties into the bladder. When the bladder becomes full, one may feel the urge to pass urine.

Some people with severe kidney disease make urine that has a lot of water, but does not contain much waste products. This means the blood has a high level of waste products, including potassium.

14 HOW LONG CAN ONE LIVE WITH KIDNEY DISEASE?

Many people think that if their kidneys fail, it is the end of their life. But with modern advances in health care, this is not the case. How long one can live, depends on age and overall health. Even if one reaches kidney failure stage, he/she can continue to live for a long time with dialysis or kidney transplants.

15 WHAT HAPPENS IF KIDNEYS COMPLETELY FAIL?

Patients whose kidneys have completely shut down can live productive lives for years using a renal replacement therapy. The kidney is the only organ that modern medicine has been able to successfully replace with long-term success. There are three types of renal replacement therapy: haemodialysis, peritoneal dialysis and kidney transplantation.

16 WHAT IS POLYCYSTIC KIDNEY DISEASE (PKD)?

Polycystic kidney disease is a genetic condition that causes s large number of cysts to form in the kidneys. These cysts are filled with fluid and profoundly enlarge the kidneys. This change to the kidneys' structure causes reduced kidney function and eventually leads to kidney failure.

17 WHAT IS CREATININE?

Creatinine is a waste product made by muscles that kidneys remove from our blood. The level of creatinine rises as kidney function decreases. Thus, kidney function is most commonly determined by measuring the level of creatinine in the blood.

18 WHAT IS PERITONEAL DIALYSIS?

In peritoneal dialysis, special fluid is introduced into the abdomen through a surgically placed catheter in the abdomen. The fluid remains in the abdomen and draws excess fluid and waste products from the blood. After a prescribed period, the fluid (with the waste products) is drained and discarded. Patients repeat this process 3-6 times a day. Peritoneal dialysis is done by the patient or family member at home and requires some training. It can be done either manually or using a machine called automated peritoneal dialysis (APD).

19 WHAT IS HAEMODIALYSIS?

In haemodialysis, the patient's blood is pumped from the body, through an artificial kidney and then returned to the body. The artificial kidney works by pumping the patient's blood through thousands of tiny tubes that are bathed in a special solution, called the dialysate. Waste products in the blood float across the tubes into the dialysate, purifying the blood. In order for haemodialysis to work patients need a way to get blood out of the body into the artificial kidney and back in to the body. This pathway is called a "vascular access," or simply an "access." Patients must have a vascular access surgically placed prior to starting haemodialysis. The vascular access can be either temporary (hemodialysis catheter) or permanent (arteriovenous fistula). Haemodialysis is generally done three times a week, and takes between three and four hours per session at a dialysis centre.

20 HOW DOES HIGH BLOOD PRESSURE AFFECT THE KIDNEY?

High blood pressure (also called hypertension) damages the kidney's blood-filtering units so the blood doesn't get cleaned. Eventually, this type of damage can cause irreversible shutdown of the kidneys.

21 WHAT IS PHOSPHORUS?

Phosphorus is a mineral found in many foods. Phosphorus is absorbed into the bloodstream every time one eats. Phosphorous is used by muscles for energy and combines with calcium to form bones. Any excess phosphorous is removed from the blood stream by the kidneys and excreted in the urine.

22 WHAT HAPPENS WHEN BLOOD PHOSPHORUS IS TOO HIGH?

Over time, a high PTH and high phosphorus can cause bone and blood vessel disease. This can cause bone pain, muscle weakness and broken bones. The blood vessels can harden and this may contribute to high blood pressure, strokes and heart attacks.

23 WHAT ARE PHOSPHATE BINDERS?

Phosphate binders are prescribed to patients that need additional help controlling phosphorus. Taken with every meal, these medications prevent the body from absorbing the phosphorus in food.

24 HOW LONG CAN ONE STAY ON DIALYSIS WHILE WAITING FOR A TRANSPLANT?

There is no set upper limit for the amount of time spent on dialysis. Some patients have gone over 25 years and it all depends on health condition of the patient and the quality of dialysis.

25 WHAT ARE THE RISKS OF KIDNEY TRANSPLANT SURGERY?

A kidney transplant is the definitive form of treatment for end stage kidney disease (ESKD). Kidney transplant involves meticulous pre-operative planning and evaluation of both the recipient and kidney donor. Patients undergoing transplant surgery have the usual risks associated with any surgical procedure. In addition, the kidney transplant recipients need to take drugs called immunosuppressive medications which reduce their immunity, leading to increased risk of infections after transplant. These medicines also increase risk of developing high blood sugars requiring medicines for their control.