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Overview On Diabetic Nephropathy

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Abstract:

Diabetic nephropathy is a serious kidney disease of type 1 and type 2 diabetes. It is also called diabetes. About 25% of people with diabetes end up with kidney disease.Diabetes nephropathy affects the ability of the kidneys to perform their normal function of removing waste and excess fluid from the body. The best way to prevent or delay diabetic nephropathy is to main-tain a healthy lifestyle and treat diabetes and high blood pressure.For many years, this condition has slightly damaged the delicate kidney filter system. Early treatment can prevent or slow the progression of the disease and reduce the risk of complications. Your kidney disease can progress to kidney failure, also called end-stage renal disease. Kidney failure is a life-threatening condition. At this stage, treatment options are dialysis or kidney transplantation.

Keywords: Kidney Diabetes, End Stage Kidney Disease (ESRD), Chronic Kidney Disease (CKD), Diabetes Kidney Disease

Symptoms

In the early stages of diabetic nephropathy, you may not notice any signs or symptoms. In the later stages, signs and symptoms include [1]

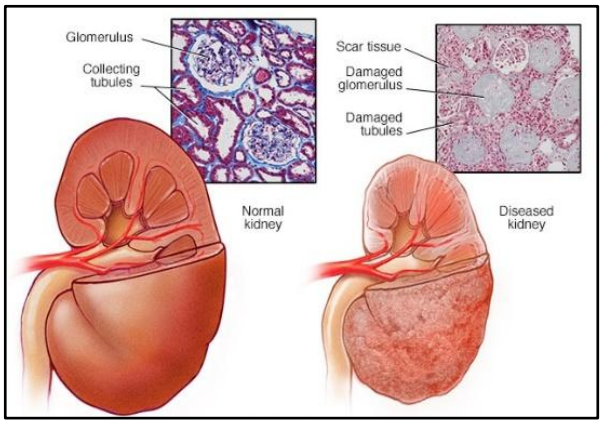
- Confusion or difficulty concentrating
- Nausea and vomiting
- Swelling of feet, ankles, hands or eyes
- Itching Persistently
- Reduced need for insulin or diabetes medicine
- Worsening blood pressure control
- Breathing shortness
- Loss of appetite
- Protein in the urine
- Increased need to urinate
- Fatigue

Causes

- Diabetes nephropathy results when diabetes damages your blood vessels and other kidney cells. [2]

How the kidneys work

Kidneys contain millions of small groups of blood vessels (glomeruli) that filter waste from your blood. Severe damage to these blood vessels can lead to diabetic nephropathy, reduced kidney function and kidney failure. [3]

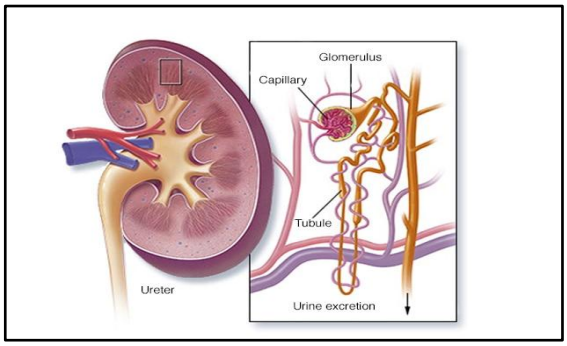


Normal kidney vs. diseased kidney

A typical kidney has about 1 million filters. Each unit, called glomerulus, meets a tube, which collects urine. Conditions such as high blood pressure and diabetes affect the functioning of the kidneys by damaging the parts of the filter and collecting the tubules and causing inflammation.

Diabetic nephropathy causes

Diabetes nephropathy is a common type-1 and type-2 diabetes. In time, poorly controlled diabetes can damage the blood vessels that cluster the kidneys. This can cause kidney damage and lead to high blood pressure. High blood pressure can cause kidney damage by increasing the pressure on the delicate kidney filter system.[4]



Kidney cross section

Blood enters the kidneys through the kidneys. The kidneys remove excess fluid and waste from the blood through units called nephrons. Each nephron contains a filter (glomerulus) with a network of tiny blood vessels called capillaries. Glomeruli filter out waste products and substances your body needs, such as sodium, phosphorus, and potassium, and pass into smaller tubules. The things your body needs are rehydrated. Waste products flow between the ureters, tubes leading to the bladder.

Risk factors

Your risk of diabetes nephropathy is higher if you have type 1 or type 2 diabetes. Several other factors may increase the risk of diabetic nephropathy, including. [5]

- High blood sugar (Hyperglycemia) that cannot be properly controlled
- Uncontrolled high blood pressure (hypertension)
- Smoking
- High blood cholesterol
- Family history of diabetes and kidney disease

Complications

- Problems with diabetic nephropathy can develop gradually over months or years. They can include. [6]
- Fluid retention, which can cause swelling of the arms and legs, high blood pressure or fluid in the lungs (pulmonary edema)
- Elevated levels of potassium in the blood (Hyperkalaemia)
- Cardiovascular disease (cardiovascular disease), which can lead to stroke
- Vascular damage to the retina (diabetic retinopathy)
- Anemia
- Sores on the feet, erectile dysfunction, diarrhea and other problems related to damaged nerves and blood vessels
- Pregnancy complications that pose a risk to the mother and fetus.
- Chronic kidney damage (end-stage kidney disease), which will eventually require dialysis or a kidney transplant to survive.

Prevention

- To decrease the risk of growth of diabetic kidney disease. [7]

Treat your diabetes

- Novel diabetes treatment, diabetic kidney disease can be stopped.

Manage high blood pressure or other medical conditions

If you have high blood pressure or other conditions that increase the risk of kidney disease, work with your doctor to get tested. Ask your doctor about tests to look for signs of kidney damage.

Follow the directions for over-the-counter medications

If you use over-the-counter pain relievers, such as aspirin and ibuprofen (Advil, Motrin IB, others), follow the package instructions. For people with diabetes, taking these painkillers can cause kidney damage.

Maintain a healthy weight

If you have a healthy weight, make an effort to keep it physically active most days a week. If you need to lose weight, talk to your doctor about weight loss strategies, such as increasing daily exercise and reducing calories.

No smoking

Smoking cigarettes can damage the kidneys and worsen existing kidney damage. If you are using sigrates, talk to your doctor about smoking cessation strategies. Support groups, counselling, and therapy can help you quit.

Diagnosis

To determine if you have kidney disease, you may need other procedures and procedures, such as. [8]

Blood Tests

If you have diabetes, you will need a blood test to monitor your condition and determine how your kidneys are functioning.

Urine Analysis

Urine samples provide information about your kidney function and whether you have too much protein in your urine. High levels of a protein called microalbumin can indicate that your kidneys are infected.

Examination

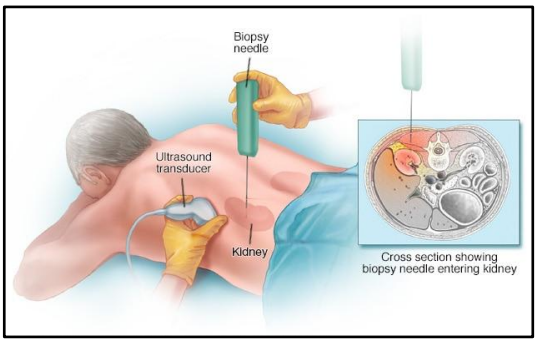
The doctor may use x-rays and ultrasound to assess the structure and size of the kidneys. You may also have a CT scan and MRI to find out how well the kidneys are doing. In some cases, other imaging tests may be used.

Kidney function tests

The doctor can test the kidney filter capacity using kidney analysis tests.

Renal Biopsy

Your doctor may recommend a kidney biopsy to remove a sample of kidney tissue. You will be given an anesthetic (local anesthetics). The doctor will then use a fine needle to remove small pieces of kidney tissue to be examined under a microscope.



Kidney biopsy

During a kidney test, a doctor uses a needle to remove a small sample of kidney tissue from a laboratory test. A biopsy needle is inserted into the skin and is usually guided by a thinking tool, such as an ultrasound.

Treatment

The first step in treating diabetes nephropathy is to treat and manage diabetes and, if necessary, high blood pressure (hypertension). With good blood sugar and high blood pressure, you can prevent or delay kidney failure and other problems. [9]

Medications

In the early stages of the disease, treatment may include several drugs, such as future ones.[10]

See High Blood Pressure: Medications called angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor blockers (ARBs) are used to treat high blood pressure. It is not recommended to use both together because of the increased side effects. Studies support the goal of studying blood pressure of less than 140/90 mm of mercury (mm Hg) depending on age and risk of cardiovascular disease.

Look for high blood sugar levels: Many medications have been shown to help control high blood sugar levels in people with diabetes nephropathy. Studies support a haemoglobin A1C target of less than 7%.

Reduce high cholesterol: Cholesterol drugs called statins are used to treat high cholesterol and reduce protein in the urine.

Promotes bone health: Medications that help regulate calcium phosphate balance are important for keeping bones healthy.

Look at protein in the urine: Medications often lower the level of albumin protein in the urine and improve kidney function.

Treatment of advanced kidney diabetic disease

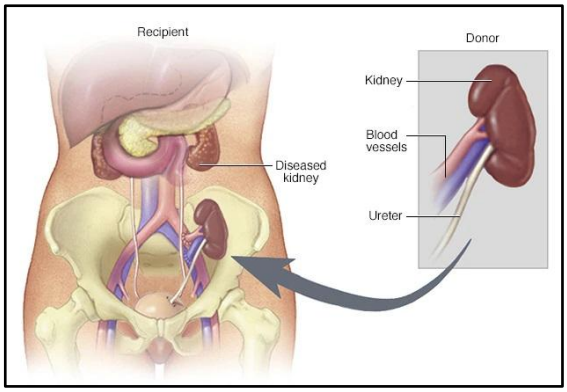
If your condition progresses to kidney failure (end-stage renal disease), your doctor will help you to proceed with treatment that focuses on restoring your kidney function or making you more comfortable. Options include. [11]

Kidney dialysis

This treatment is a method of removing waste and excess fluid from the bloodstream. The two main types of dialysis are hemodialysis and peritoneal dialysis. The first, most common method, you may need to visit a dialysis centre and be connected to a dental implant about three times a week, or you may have a qualified assistant to perform dialysis at home. Each session lasts three to five hours. The second method can also be done at home. [12]

Transplantation

In some cases, the best option is a kidney transplant or kidney transplant. If you and your doctor decide to have a transplant, you will be tested to see if you qualify for surgery. [13]



Kidney Transplant

Kidney transplant

During kidney transplant surgery, donor kidneys are implanted in the lower abdomen. The blood vessels of the new kidneys are attached to the blood vessels in the lower abdomen, just above one of the legs. A new kidney ureter is connected to the bladder. Without causing any problems, your kidneys are still in place.

Symptom management

If you decide not to have dialysis or kidney transplantation, the duration of your life will be a few months. You may be offered treatment to help you feel better. [14]

Possible future treatments

In the future, people with diabetes nephropathy may benefit from progressive rehabilitation therapy. These methods can help to reverse or delay the kidney damage caused by the disease. For example, some researchers think that if a person's diabetes can be treated with future treatments, such as pancreatic islet cell transplantation or stem cell therapy, kidney function may improve. However, these therapies are still under investigation. [15]

In addition, researchers are exploring stem cells and several new drugs for diabetic nephropathy in patients.

Lifestyle and home remedies

Lifestyle behaves or can support your medical goals. Depending on the condition, kidney function, and overall health, these actions may include. [16]

Keep busy on most days of the week: On the advice of your doctor, try to get at least 30 minutes of physical activity several days a week.

Change your diet: Talk to your dietitian to limit the amount of sodium in your diet, choose foods high in potassium, and limit the amount of protein you eat.

Quit smoking: If you smoke, talk to your doctor about smoking cessation.

Maintain a healthy weight: If you need to lose weight, talk to your doctor about weight loss strategies, such as increasing daily exercise and reducing calories.

Taking daily aspirin: Talk to your doctor to find out if low-dose aspirin is right for you.

Caution: Tell doctors who do not know your medical history that you have diabetes nephropathy. They may take steps to protect the kidneys from further damage caused by clinical trials using a comparative agent (such as angiograms and CT scans)

You will also be able to see if you have a urinary tract infection and seek treatment immediately.

Food and day to day changes

Your doctor or dietitian will help you plan special meals that are friendly to the kidneys. These foods are more restrictive than the standard diet of people with diabetes. Your doctor can advise you. [17]

Limit protein intake

Consume healthy fats, but reduce the consumption of fats and acids

Reduce sodium depletion to 1500-2000 mg / dL or less

Reduce your potassium intake, which can include reducing or reducing foods high in potassium such as bananas, avocados and spinach

Reduce the consumption of foods rich in phosphorus, such as yogurt, milk and processed meat

Your doctor can help you create a customized diet. You can also work with a dietitian to help you better understand how to better balance your diet. [18]

The conclusion

If you have been diagnosed with diabetes, there are steps you can take to keep your kidneys healthy and reduce the risk of diabetes nephropathy.

Keep your blood sugar levels within the target range.

Monitor your blood pressure and treat high blood pressure.

If you smoke, stop. Work with your doctor if you need help finding and sticking to a smoking cessation plan.

Lose weight if you are overweight or obese.
Follow a healthy diet with low sodium. Focus on eating fresh or cold foods, lean meats, whole grains, and healthy fats. Limit your processed foods that can be loaded with salt and empty calories.
Make exercise a regular part of your routine. Start small and make sure you work with your doctor to determine the best exercise program. Exercise can help you to maintain a healthy weight and lower your blood pressure.

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