Kidney-heart Connection

Healthy kidneys are important for cardiovascular health. Two most common cause of chronic kidney disease are hypertension and diabetes, and these are also the leading risk factor for heart disease. The cause and the treatment approaches for kidney disease and heart disease, often overlap.

It is known that most people with chronic kidney disease will die of heart disease before they develop kidney failure and require dialysis. Most people don't develop any symptoms until the kidney starts to fail and this often takes several years and at this point kidney function drops below 15%.

This results in accumulation of waste products and fluid in the body, which would cause loss of energy, trouble concentrating, decreased appetite, swelling of the feet and ankles and more frequent urination specially at night

A Vicious cycle Kidneys play an important role in regulating blood pressure by controlling fluid and sodium level in the blood. When the blood pressure rises, kidneys will help to remove water and sodium from the bloodstream into the urine for excretion. This will bring the blood pressure lower, by stimulating the fluid loss through urination.

On the other hand, when the blood pressure falls, the kidneys retain water and sodium to conserve blood volume and raise the blood pressure Patients with high blood pressure tend to retain too much water and sodium. This leads to added stress on the circulation within the kidneys and can cause weakening of the blood vessels inside the kidneys.

This can become a vicious cycle because kidney disease can cause high blood pressure in itself and uncontrolled high blood pressure is the cause of progressive kidney failure. Likewise, prolonged exposure to high blood sugar as occurs in diabetes causes the membrane of the tiny blood vessels known as capillaries to thicken.

This damages the capillaries within the kidneys and reduces their filtering capacity.

Detecting kidney disease: #1. Serum creatinine- Creatinine is released from the muscle cells into the bloodstream and it is one of the substances, the kidneys filter from the blood. If the kidney function declines, blood creatinine level rises. Levels greater than 1.2 mg/dL in women or 1.4 mg/dL in men may suggest early kidney disease. 2.

Glomerular Filtration rate , otherwise called GFR- this test uses the serum creatinine level along with your age and gender to estimate how well your kidneys are working. Value below 60 is a sign that the kidneys are not working properly. 3. Urine protein test- protein in the urine is an early sign of kidney disease.

A sensitive test is the urine albumin to creatinine ratio (UACR) and this can detect very small amount of the protein, called albumin, a condition known as microalbuminuria. A UACR above 30 MG/ gram may suggest kidney disease.

Who should be tested- People with cardiovascular disease, diabetes, and high blood pressure are higher risk for chronic kidney disease and should be checked at least once a year. Obesity, chronic viral infections such as HIV and hepatitis C, autoimmune disease, such as lupus, and also cancer should also be tested.

Certain medications which include all nonsteroidal anti-inflammatory agents such as Ibuprofen and Naproxen (Advil, Aleve)can damage the kidneys.

Slowing Kidney Disease- -Heart healthy lifestyle, especially low sodium diet. -If you have diabetes and hyper tension using blood pressure drugs known as ACE Inhibitors and ARBs help to slow the progression of kidney disease -New class of medications originally designed to treat diabetes called SGLT2 inhibitors, help to prevent kidney damage, even in people who do not have diabetes.

They include Canagliflozin(Invokana),Dapagliflozin(Farxiga), Empagliflozin(Jardiance) - Another medication called Fineranone (Kerendia) also helps to slow the progression of diabetic kidney disease, and also prevents heart related complications. -Avoid taking nonsteroidal, anti-inflammatory agents like Motrin and Advil long-term, without doctors supervision, since they can cause kidney disease

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