

Chronic Kidney Disease part 2

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Approximately 8.3 million people, or 4.7% of the population of the United States has chronic kidney disease based on a classification using a Glomerular Filtration Rate (GFR) of less than 60 cc/min. Chronic kidney disease is a worldwide public health related problem. In the United States, there is a rising incidence of kidney failure. When the kidneys fail to a point that a person needs renal replacement therapy (RRT) such as dialysis or kidney transplant, it is called End Stage Renal Disease (ESRD). The number of patients involved in the ESRD Medicare funded program has increased from approximately 10,000 in 1973 to 452,957 as of December 2003. A rising prevalence of treated end stage renal disease can be attributed to the increase in the number of patients who start RRT, and to a smaller extent, an increase in survival of patients with ESRD.

The most common causes of chronic kidney disease are diabetes mellitus and hypertension, comprising 70% of patients. Less common causes include glomerulonephritis, polycystic kidney disease, Alport's disease, cystinosis, Fabry's disease, drugs, and radio contrast material used for certain diagnostic procedures.

There are some simple tests that can be done to find out whether or not a person has chronic kidney disease. The first one is a blood test comprised of a basic metabolic profile that checks blood urea nitrogen and creatinine. This gives an idea whether or not the kidneys are working efficiently. A serum albumin helps in calculating the glomerular filtration rate. Glomerular filtration rate gives a good estimate as to how well the kidneys are working. A simple urine analysis gives an indication if there is protein spilling in the urine. Microalbuminuria, which is defined as albumin excretion persistently between 30 and 300 mg per day, helps in determining if there is the beginning of chronic kidney disease. If significant protein spillage is present in the urine, then quantification of a 24 hour urine collection would be of benefit. Urinary albumin to creatinine ratio is useful in getting an estimate of the amount of albumin in the urine. Besides these tests, an ultrasound of the kidneys would be done to rule out the possibility of obstruction to the flow of urine from the kidneys, also called hydronephrosis.

It is also important to know if there is evidence of polycystic kidneys or if the kidneys have shrunken disproportionately, giving rise to the possibility of hypertensive nephrosclerosis. A Doppler study of the renal arteries would help to rule out the possibility of renal artery stenosis, which is a blockage in the blood vessels going to the kidney, resulting in impairment of the flow of blood to the kidneys. Rarely, an MRA of the renal arteries or captopril renal scan may be necessary. A kidney biopsy may ultimately be necessary for a definitive diagnosis.

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