

Chronic kidney disease

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CKD is defined by National Kidney Foundation and KDIGO as presence of either decreased kidney function as defined as Glomerular Filtration Rate (GFR) $<60\text{cc/min}$ with or without evidence of kidney damage or presence of kidney damage with or without decreased kidney function present for at least three months. Chronic Kidney Disease (CKD) affects 16% of US population. It is third most common chronic medical condition in United States. The prevalence of CKD is increasing world wide. CKD has been divided into various stages (stages 1-5) based on kidney function and kidney damage to help physicians manage patients with CKD. Stage 5 is called kidney failure also labeled as End Stage Renal Disease (ESRD) which requires institution of renal replacement therapy. This stage system was proposed by NKF in 2002 and has been revised by KDIGO in 2009. Medicare expense for care of patients with ESRD is rising due to high prevalence of patients with ESRD (currently 6% of total Medicare budget). CKD can be due to primary or secondary disease processes. Diabetes Mellitus is the most common cause of CKD followed by Hypertension and glomerular diseases. Patients with CKD are high risk population due to high risk of mortality and morbidity. There is high risk of both cardiovascular and non cardiovascular complications especially infections in CKD patients. Most patients with CKD die of cardiovascular events before reaching ESRD. CKD can progress to End Stage Renal Disease. A number of complications can occur as a result of compromised renal function which includes Anemia, CKD-BMD, Hypertension, Dyslipidemia, Metabolic Acidosis, Hyperuricemia, Cardiovascular disease. These complications play a role in progression of renal disease. Treatment of CKD includes management of Hypertension, Diabetes Mellitus, Metabolic Acidosis, Dyslipidemia, and CKD-BMD to slow progression of renal disease and decrease cardiovascular mortality and morbidity. These patients should receive immunization for flu, pneumococcal and Hepatitis B infections. Their drug regimen should be monitored to avoid dangerous drug-drug interactions. The hypoglycemic agents should be changed to agents which are not renally excreted. The dose of the drugs should be adjusted to the level of renal function to avoid systemic toxicity especially in the elderly population.

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