



Kidney Disease

VA has a comprehensive research portfolio aimed at preventing and slowing the progression of chronic kidney disease and advancing the treatment of kidney failure. There are many causes of chronic kidney disease, but the two main causes—accounting for up to two-thirds of cases—are diabetes and high blood pressure. VA research on these two conditions may thus help reduce the prevalence of chronic kidney disease in the veteran population.

Examples of VA Research Advances

Artificial kidney will offer ‘dialysis on the go’ – A new device called an AWAK—short for “Automated Wearable Artificial Kidney”—may enable patients with kidney failure to undergo continuous treatment without being hooked up to a stationary dialysis machine. This portable artificial kidney would be the first wearable model based on peritoneal dialysis—a process that requires no transfer of blood outside the body. The AWAK, invented by two VA kidney specialists, is expected to be ready for clinical trials by 2010.

No survival benefit from B vitamins – Patients with chronic kidney disease are at high risk for hardening and narrowing of the arteries, and prior studies have identified the amino acid homocysteine as a risk factor for these conditions. But a recent study involving more than 2,000 veterans with advanced chronic kidney disease found that lowering homocysteine through high doses of folic acid and other B vitamins did not reduce the rate of death or cardiovascular events. The authors speculated that “possibly the underlying burden of disease was too great for a measurable benefit” from lowering the amino acid.

Tracking heart risk in patients with kidney disease – VA researchers are exploring how the progression of heart disease in those with chronic kidney disease is affected by various cardiovascular risk factors. They are looking at traditional risk factors such as diabetes and high blood pressure and newer ones such as homocysteine, C-reactive protein and lipoprotein (a), the roles of which are still under investigation. The study will use an innovative ultrasound method that measures the thickness of the inner lining of neck arteries as a marker of how much artery-clogging plaque exists in the whole body.

Facts about Chronic Kidney Disease

The kidneys are a pair of bean-shaped, fist-sized organs located on either side of the spinal column. Kidneys perform life-sustaining functions that keep the rest of the body in balance, such as helping to remove waste and excess fluid from the body, regulating water and minerals in the blood, and releasing vital hormones. As kidney disease worsens, complications such as high blood pressure, arteriosclerosis, anemia, weak bones, and nerve damage can develop. If the disease progresses to kidney failure, when the kidneys shut down, dialysis or a kidney transplant is needed to maintain life. Currently, some 26 million adults in the U.S. have chronic kidney disease.

