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KIDNEY DISEASE LINKED TO INCREASED RISK OF PERIPHERAL ARTERY DISEASE

Screening Might Help Prevent Surgery and Amputations

Washington, DC (Monday, January 8, 2007) — Chronic kidney disease is a risk factor for peripheral artery disease (PAD)—a common but often undetected condition causing reduced blood flow in the legs, reports a study in the February *Journal of the American Society of Nephrology*.

"Recognition of this increased risk is important, because early detection of PAD through a simple screening test could identify high-risk patients and prevent PAD-related complications, such as leg revascularization surgery and amputation," comments Dr. Keattiyot Wattanakit of University of Minnesota, lead author of the study.

The researchers analyzed a database of more than 14,000 middle-aged adults. Based on a standard test, the subjects were classified as having normal kidney function, mildly decreased kidney function, or stage 3 to 4 chronic kidney disease (CKD). Patients with CKD have gradual, irreversible loss of kidney function.

During an average follow-up period of 13 years, the subjects underwent regular assessments for the development of PAD. Patients with PAD have reduced blood flow in the legs, usually caused by atherosclerosis—sometimes called "hardening of the arteries." Just as atherosclerosis of the coronary arteries leads to reduced blood flow to the heart, atherosclerosis of the leg arteries causes inadequate blood flow to the leg muscles during exercise.

Overall, 7.1 percent of subjects developed PAD during follow-up. The rate was substantially higher for subjects with CKD: 22.8 percent, compared to 6.6 percent for those with normal kidney function. (The PAD rate was not significantly increased for subjects with mildly decreased kidney function.) After adjustment for factors like age, race, and sex, the rate of PAD was nearly two times higher in CKD patients than in those with normal kidney function.

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Coronary heart disease and PAD often coexist because they share a number of risk factors, such as high blood pressure, diabetes, and smoking. With further adjustment for these cardiovascular risk factors, the risk of PAD was approximately 50 percent higher in CKD patients.

Peripheral artery disease is a very common condition. The main symptom is pain in the legs during walking or other exercise (called "intermittent claudication"). However, because many patients have no symptoms, PAD often goes unrecognized. If PAD worsens, it can eventually require surgery to reconstruct the leg blood vessels, or even amputation.

"It is now recognized that patients with CKD are at increased risk of cardiovascular disease and death," says Dr. Wattanakit. "As the prevalence of CKD increases, the proportion of patients with coronary heart disease and PAD will likely increase as well."

Recognizing the increased PAD risk in patients with kidney disease, especially those without typical symptoms, might help to prevent these adverse outcomes. Screening for PAD can be done through a test called the ankle-brachial index, which simply compares the blood pressure in the arm and leg. Screening is already recommended for many patients with diabetes. "Our findings similarly highlight and support development of a PAD screening strategy to identify CKD patients at high risk for PAD," Dr. Wattanakit and coauthors conclude.

The ASN is a not-for-profit organization of 10,000 physicians and scientists dedicated to the study of nephrology and committed to providing a forum for the promulgation of information regarding the latest research and clinical findings on kidney diseases.

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