Coronary calcium predicts heart disease risk in patients with chronic kidney disease

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Calcium buildup in the coronary arteries may be a better indicator of kidney disease patients' risk of heart disease than traditional risk factors used in the general population, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (*JASN*). The findings provide valuable new information that could help safeguard the heart health of patients with kidney disease.

Heart disease is the leading cause of death in individuals with chronic kidney disease (CKD). Some studies have found that conventional risk factors for predicting an individual's likelihood of developing heart disease aren't as useful in CKD patients as they are in the general population.

Kunihiro Matsushita, MD, PhD (Johns Hopkins Bloomberg School of Public Health) and his colleagues looked to see if calcium measurements within blood vessel walls might be helpful. Because the kidney helps regulate the body's calcium levels, individuals with chronic kidney disease often have altered calcium metabolism, which may influence the usefulness of calcium in the coronary artery walls as an indicator of heart disease.

The researchers studied 6553 adults aged 45 to 84 years who did not have prior cardiovascular disease and who were participating in the Multi-Ethnic Study of Atherosclerosis. Among the participants, 1284 had CKD.

During a median follow-up of 8.4 years, 650 cardiovascular events (coronary heart disease, stroke, heart failure, and peripheral artery disease) occurred, with 236 of the events occurring in participants with CKD. The investigators found that calcium build-up in the coronary artery walls was more useful for correctly determining CKD patients' risk of cardiovascular disease (particularly coronary heart disease and heart failure) than other measures of atherosclerosis such as thickness of the carotid artery walls and narrowing of the arteries in the legs.

"Our research is important since it assures the usefulness of coronary artery calcium for better cardiovascular disease prediction in persons with CKD, a population at high risk for cardiovascular disease but with potential caveats for the use of traditional risk factors," said Dr. Matsushita.

More information: The article, entitled "Subclinical Atherosclerosis Measures for Cardiovascular Prediction in CKD," will appear online at jasn.asnjournals.org/ on August 21, 2014.

Provided by American Society of Nephrology

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