

Tulane researchers create better model to predict heart risks for patients with kidney disease

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A team led by Dr. Jiang He (left) and Joshua Bundy, PhD, (right) developed a new method to help doctors better calculate cardiovascular risks for patients with chronic kidney disease.

Tulane University researchers have developed a new method to help doctors better calculate the 10-year risk for stroke, heart attacks and other cardiovascular problems for patients with chronic kidney disease.

The [findings](#) were published in [JASN](#), the journal of the American Society of Nephrology.

Individuals with chronic kidney disease (CKD) often develop atherosclerotic cardiovascular disease (CVD) but common prediction tools to determine a person's risk of CVD were developed for the general population and may not include certain factors relevant to patients with CKD. Improving CVD risk prediction in patients with CKD may help identify those among this growing population who are truly at high risk, as well as identify those who are at low risk and less likely to benefit from invasive interventions.

A team led by Dr. Jiang He, the Joseph S. Copes MD Chair of Epidemiology, and Joshua Bundy, PhD, assistant professor of epidemiology at Tulane University School of Public Health and Tropical Medicine aimed to create new models using several clinically available variables and novel biomarkers that were especially important in patients with CKD.

In the researchers' analysis of 2,604 participants of the Chronic Renal Insufficiency Cohort Study, they found that several factors not included in prior prediction models were important for atherosclerotic CVD prediction among patients with CKD. These included measures of long-term glycemia (HbA1c), inflammation (high-sensitivity C-reactive protein), kidney injury (urinary albumin-creatinine ratio), and cardiac injury (troponin-T and NT-proBNP).

"We created two new prediction tools for patients with CKD: the first is a simple model that includes factors routinely measured by healthcare providers and the second is an expanded model with additional variables particularly important to patients with CKD, including measures of long-term blood sugar, inflammation, and kidney and heart injury," He said. "We found that the new models are better able to classify patients who will or will not have a stroke or heart attack within 10 years compared with the standard models."

"The new tools may better assist healthcare providers and patients with CKD in shared decision-making for the prevention of heart disease," added Bundy.