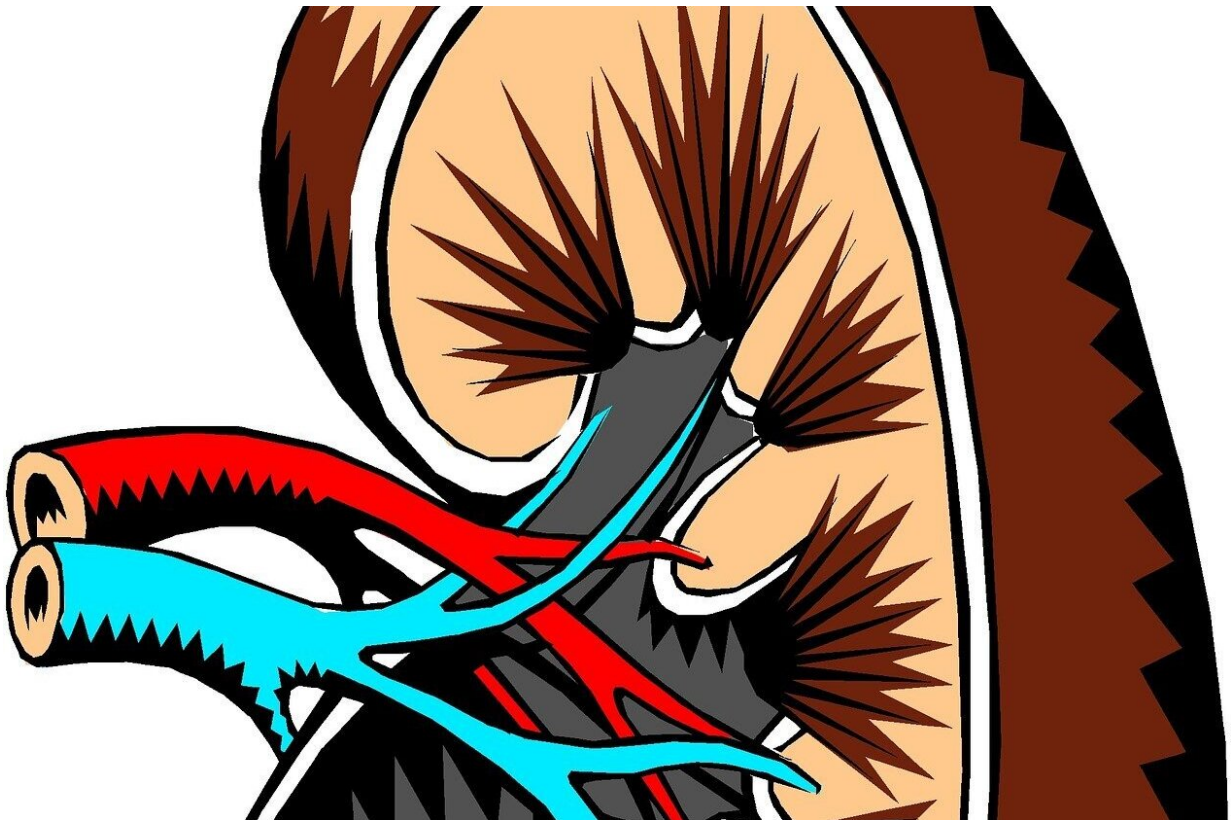# Improving models to predict cardiovascular disease in individuals with kidney dysfunction

February 10 2022

Credit: Pixabay/CC0 Public Domain

A new study reveals that certain changes to models that predict the risk of developing cardiovascular problems in the general population can help

clinicians improve risk prediction in individuals with kidney disease. The findings, which are published in *JASN*, may be used to help protect the heart health of patients with kidney disease.

Individuals with chronic [kidney disease](link) (CKD) often develop atherosclerotic cardiovascular disease (CVD)—such as strokes and heart attacks—but common prediction tools to determine a person's risk of CVD were developed for the [general population](link) and may not include certain factors relevant to patients with CKD. Improving CVD [risk prediction](link) 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 Jiang He, MD, Ph.D. and Joshua D. Bundy, Ph.D., MPH (Tulane University School of Public Health and Tropical Medicine) aimed to create new equations using many clinically available variables and novel biomarkers that may be 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](link) 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," said Dr. He. "We found that the new models are better able to classify patients who will or will not have a stroke or [heart attack](link) 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 Dr. Bundy.

More information: "Risk Prediction Models for Atherosclerotic Cardiovascular Disease in Patients with Chronic Kidney Disease: The CRIC Study," *JASN*, DOI: 10.1681/ASN.2021060747

Provided by American Society of Nephrology

Citation: Improving models to predict cardiovascular disease in individuals with kidney dysfunction (2022, February 10) retrieved 1 May 2024 from https://medicalxpress.com/news/2022-02-cardiovascular-disease-individuals-kidney-dysfunction.html