Coronary calcium scores may help predict risk of death in patients without family history of heart disease

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(Medical Xpress)—A new Emory University study shows that coronary artery calcium (CAC) scoring, a type of low-dose CT scan, accurately predicts the risk of dying over the next 15 years in patients with and without a family history of early heart disease. The findings were presented this week at the American College of Cardiology meeting in Washington, D.C.

A coronary artery calcium scan is a simple, non-invasive test that uses low-dose X-rays to measure the amount of calcium in plaque on the walls of the arteries of the heart.

"While we found that CAC scoring is accurate at predicting the risk of death over a 15-year period in all patients, this is the first study to show it is most accurate in those without a family history of early heart disease," says Joseph Knapper, MD, an internal medicine resident at Emory University School of Medicine.

"This suggests there may be a benefit to expanding CAC testing to all low-risk patients, regardless of their family history, allowing patients to learn about their risks sooner and take actions to decrease them."

Current guidelines only recommend CAC scoring for low-risk patients if they have a family history of early heart disease.

Knapper and his colleagues followed 6,300 patients with a family history of early heart disease, and about 2,800 patients without a history. Each study participant underwent a CT scan to receive a CAC score and was interviewed to establish their risk factors for heart disease (i.e. cigarette smoking, high blood pressure, diabetes, etc.). Researchers tracked the patients for 15 years and recorded deaths that occurred in that time period, regardless of the cause.

They found that patients with a higher CAC score were more likely to have died over the 15-year period, even after controlling for other risk factors such as smoking and high blood pressure. Most importantly, the highest risk CAC scores (greater than 1,000) showed a nearly eight times higher risk of death compared to the lowest risk score in patients without a family history, whereas in those with a family history the risk was increased less than four-fold.

Knapper says further research, including cost analysis, is needed before a recommendation could be made to expand CAC screening guidelines.

Provided by Emory University