New screening questionnaire can identify people at high risk of developing heart disease

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More than 40% of middle-aged adults have silent coronary artery disease. Researchers have developed a new screening questionnaire to help identify individuals at the highest risk for coronary artery disease, according to late-breaking research presented today at the American Heart Association's Scientific Sessions 2020.

Coronary artery disease is caused by atherosclerosis, or deposits of fats, cholesterol and calcium in the blood vessels that supply blood to the heart. Early detection of coronary artery disease is possible by imaging blood vessels using coronary computed tomography angiography (CCTA) imaging; however, it can be expensive and requires specialized equipment.

"The buildup of plaque does not cause symptoms in the early phases of atherosclerosis yet may lead to reduced blood flow to the heart and result in a heart attack," said Göran Bergström, M.D., Ph.D., professor and lead physician at Sahlgrenska Academy, Gothenburg University, Gothenburg, Sweden and lead author of this study. "We investigated whether a personalized screening strategy using data easily measured at home could predict which patients are at high risk of developing heart disease."

The Swedish CArdioPulmonary BioImage Study (SCAPIS) included more than 30,000 men and women, ages 50-64 years, who had no history of prior heart attack or cardiac intervention. Participants were asked questions about gender, age, smoking, body measurements, cholesterol medication and blood pressure to predict their risk of coronary artery disease.

Researchers then used CCTA images to examine patients' arteries for the presence of plaque. More than 25,000 individuals from the original sample were successfully imaged. The imaging results found that silent coronary artery disease was common, with 42% of participants having plaque in their coronary arteries. A higher prevalence of atherosclerosis was observed in men and in older individuals.

In this Swedish cohort, responses to the screening questions successfully predicted which individuals had severe atherosclerosis and were at higher risk of developing cardiovascular disease.

"We were surprised that atherosclerosis was so widespread and that we could rather easily predict it with simple questions," Bergstrom said. "Our study lays the foundation for development of a home-based screening strategy to help combat cardiovascular disease. We can find people at high risk of having silent coronary artery disease using a simple screening questionnaire followed by a clinical visit to a health-care facility to define the risk further using CCTA imaging."

This study is the first report from SCAPIS, a collaborative project between six Swedish universities with the vision statement: to reduce the risk of cardiovascular and respiratory diseases for generations to come.

More information: Session: LBS.02 - Bending the Curve for CV Disease - Precision or PolyPill? www.abstractsonline.com/pp8/?_ … 4/presentation/40153

Provided by American Heart Association

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