Electrocardiography may be useful in the prevention of cardiovascular disease, study suggests

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Electrocardiography (ECG or EKG) may be helpful in measuring the risk of cardiovascular disease in asymptomatic individuals according to a study led by researchers at the Rollins School of Public Health at Emory University.

With nearly half of sudden cardiac deaths occurring in individuals who were unaware of having heart disease, researchers aimed to derive and validate a cardiovascular disease equation based primarily on ECG metrics.

Led by Amit J. Shah, MD, MSCR, assistant professor of epidemiology at Rollins, the team used data from the National Health and Nutrition Examination Survey in which approximately 10,000 community-based adults ages 40-74 years of age were followed for cardiovascular events. From these data, they derived and validated a risk equation based on a patient's age, sex and three ECG metrics: heart rate, T-axis and QT interval.

An equation based on these metrics identified risk with at least similar accuracy as the Framingham risk and AHA/ACC Pooled Cohort equations (which are the standard of care). Researchers found that by utilizing both the Framingham and ECG risk assessments together, they were able to improve risk classification of cardiovascular death by 25 percent compared to using the Framingham equation alone.

Complete results are available in the August 3rd edition of *JAMA Cardiology*.

"Although ECG's are normally used to diagnose present-day heart disease in individuals believed to be at risk, many asymptomatic patients with normal ECG's may have electrocardiographic signs of disease that could predict future risk," explains Shah. "We believe that this is a potential added benefit of the ECG: to help screen for high risk individuals, and ultimately augment preventive efforts in clinical settings."

Although results of the study proved to be significant, Shah and team believe that future research is necessary to determine whether the combined equation will improve prevention intervention and cardiovascular disease outcomes.

According to Shah, "The next step is to conduct clinical trials to test for the potential benefit of ECG as a screening tool for physicians trying to prevent cardiovascular disease. Because of the low cost of ECG compared to other diagnostic tools, such studies may have very important public health implications."

More information: Amit J. Shah et al. An Electrocardiogram-Based Risk Equation for Incident Cardiovascular Disease From the National Health and Nutrition Examination Survey, *JAMA Cardiology* (2016). DOI: 10.1001/jamacardio.2016.2173

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