

Biomarker blood test could reveal high risk heart patients in need of treatment

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Dr. Ambarish Pandey (left) and Dr. Parag Joshi believe some patients at risk of heart disease could be helped by a biomarker blood test. Credit: UT Southwestern Medical Center

Without occasionally looking under the hood, it's difficult to predict whether expensive car repairs lie ahead. In a similar way, preventive cardiologists are looking for ways to detect early stage heart disease in people who aren't currently in treatment.

Preventive cardiology researchers at UT Southwestern Medical Center believe that a new [blood test](#) for [protein biomarkers](#) could identify these individuals. Their new study, now published in *Circulation*, pooled [patient data](#) from three major patient populations including multiple ethnicities and totaling nearly 13,000 people. The team asked whether measuring levels of two biomarkers—proteins in the blood—would identify people in need of treatment.

Under the radar

The researchers found that approximately one-third of adults with mild hypertension who are not currently recommended for treatment have slight elevations of one of these two biomarkers; these

individuals were more likely to have heart attacks, strokes, or [congestive heart failure](#) over the next 10 years. In other words, these patients are "flying under the radar" and do not know that they are at greater risk of cardiovascular events.

"We think this type of [test](#) can help in the shared decision-making process for patients who need more information about their risk," said preventive cardiologist Dr. Parag Joshi, Assistant Professor of Internal Medicine. "These blood tests are easily accessible and are less expensive than some other tests for risk assessment."

Led by Dr. Joshi and Dr. Ambarish Pandey, Assistant Professor of Internal Medicine, the researchers looked at data from 12,987 participants (mean age 55 years, 55 percent female) who experienced 825 cardiovascular events, such as heart attacks and strokes, over a median follow-up time of 10 years. The information was compiled from the Atherosclerosis Risk in Communities Study, the Dallas Heart Study, and the Multi-Ethnic Study of Atherosclerosis.

Further studies are needed to determine whether informing blood pressure treatment with these biomarkers has an effect on patient outcomes.

"One of the proteins, high sensitivity troponin, measures injury to the heart muscle, and the other, called NT-proBNP, measures stress on the heart muscle," Dr. Pandey explained. "The presence of these proteins is indicative of subtle long-term cardiac injury, like wear and tear over time."

High blood pressure, along with other risk factors, is known to increase the risk of heart attacks, strokes, and congestive heart failure. Treatment to lower blood pressure reduces this risk. Other factors that play a role in cardiovascular disease include high cholesterol, age, gender, smoking, poor diet, lack of exercise, and diabetes.

"The process of developing heart disease can be difficult to pick up on based only on these [risk factors](#). Now we have tests to detect markers of [heart](#) disease in people without any symptoms who are actually at higher risk for cardiovascular events," Dr. Joshi said. "It is important to note that we have to make sure health care providers act appropriately when there is an abnormal result, and not necessarily recommend a series of tests without symptoms."

Provided by UT Southwestern Medical Center

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