

SOUTHWESTERN NEWS

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CARDIAC HORMONE LEVEL INDICATES INCREASED RISK OF DEATH, PROGRESSION OF HEART FAILURE, RESEARCHERS REPORT

DALLAS – Oct. 4, 2001 – Researchers at UT Southwestern Medical Center at Dallas have found that elevated levels of a cardiac hormone is predictive of an increased risk of death or heart failure in patients with complications of coronary artery disease.

The findings, which are published in today's issue of *The New England Journal of Medicine*, provide physicians with a new method of assessing adverse outcomes in patients with acute coronary syndromes, said Dr. James de Lemos, lead author of the study and assistant professor of internal medicine at UT Southwestern.

"We've identified a test that is associated with prognosis and seems to be very important for risk stratification. A single measurement of this hormone gives important information about how likely a patient is to die or develop heart failure," he said. De Lemos, who now works in the Donald W. Reynolds Cardiovascular Clinical Research Center at UT Southwestern, collaborated on the research with Dr. Eugene Braunwald, senior author of the paper, at Brigham and Women's Hospital in Boston.

Researchers also found that the level of the hormone, termed brain natriuretic peptide, or BNP, was better at predicting adverse outcomes compared to traditional ways of prognosticating after a heart attack, de Lemos said.

Of the 2,525 patients who participated in the study, approximately half were enrolled after the onset of a heart attack and half after an episode of unstable angina, or chest pains. The researchers obtained a single measurement of BNP from the study participants shortly after admission to the hospital for acute coronary syndromes. These participants were originally part of the multicenter Orbofiban in Patients with Unstable Coronary Syndromes-Thrombolysis in Myocardial Infarction 16 study.

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After a 30-day analysis, the researchers found that levels of BNP were higher among patients who died, and patients with a higher BNP were more likely to have a new or recurrent heart attack or develop heart failure or progression of heart failure. Similar findings were reported after a 10-month analysis.

“Even in the patients who had no detectable heart damage from their episode of chest pain, elevated BNP levels identified them as being at high risk of dying or developing heart failure,” de Lemos said.

In contrast, patients with lower levels of BNP were less likely to die or develop heart failure.

BNP is a neurohormone synthesized in the muscular wall of the left ventricle of the heart. It is released into the circulation in response to ventricular dilation and pressure overload.

“We know that this is a hormone that normally has very beneficial effects in the body,” de Lemos said. “It promotes excretion of salt by the kidneys, and it dilates blood vessels. It is referred to as a counter-regulatory hormone. It is not well understood why BNP is higher in patients who later go on to die or develop heart failure, but it is possible that the body becomes desensitized to its effects.”

Further research is needed to determine medical therapies that might benefit individuals with high BNP levels, de Lemos said.

UT Southwestern physicians will begin using the BNP assay in November.

“The first use of the assay is likely to be in the emergency department, where BNP also appears to help doctors determine which patients with shortness of breath have congestive heart failure as opposed to other causes of shortness of breath, such as lung disease.”

Other study investigators included researchers from Nottingham Clinical Research Group in Nottingham, England, and the Research Institute for Internal Medicine, National Hospital, University of Oslo in Norway.

The study was supported by grants from Searle and Biosite Inc.

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