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BIOMARKER-TAILORED HEART FAILURE THERAPY YIELDS DISAPPOINTING RESULTS

Guiding Therapy by Individual NT-proBNP Targets Shows No Benefit

Orlando, FL – Using the biomarker NT-proBNP to detect early signs of worsening heart failure and individually tailor therapy does not help to avoid hospitalization or extend survival over the long term, according to research presented today at the American College of Cardiology’s 58th annual scientific session. ACC.09 is the premier cardiovascular medical meeting, connecting cardiologists and cardiovascular specialists to the latest and most innovative findings in cardiovascular science.

The PRIMA study compared the effectiveness of guiding heart failure therapy according to clinical signs and symptoms or through the use of individually selected biomarker targets. It found that regularly monitoring NT-proBNP levels and adjusting medications at the first sign of trouble only slightly improved both the amount of time patients remained out of the hospital and overall survival during follow-up, findings that were not statistically significant.

“Our study is the first to test NT-proBNP-guided therapy according to an individually set target value,” said Luc Eurlings, M.D., Maastricht University Medical Center, Maastricht, The Netherlands. “This is a strategy that is quite intuitive and already often used in daily practice, but unfortunately we found that it does not reduce morbidity and mortality.”

NT-proBNP is a protein released from cardiac muscle cells when they are stretched by the fluid overload and increased cardiac pressures that characterize heart failure. When patients are treated with heart failure medications, cardiac pressures and NT-proBNP levels decline. Because of this response, PRIMA investigators hypothesized that NT-proBNP could be used to detect worsening heart failure before symptoms appear and to guide heart failure therapy.

The PRIMA study is unique in setting an individual NT-proBNP target for each patient, rather than using a standardized target. For the study, researchers recruited a total of 437 patients who

had been admitted for heart failure to 12 medical centers in the Netherlands. Of these, 345 patients in whom NT-proBNP levels decreased during hospitalization were randomly assigned to ongoing therapy guided by clinical observations or by NT-proBNP measurements. Another 92 patients in whom NT-proBNP levels failed to decrease during hospitalization were not included in the randomization but were monitored during follow-up.

The individual NT-proBNP target for each patient was set at the lowest NT-proBNP level observed during the first two weeks after treatment for acute heart failure. During follow-up, if NT-proBNP levels increased beyond the individualized target, patients received more intense medical therapy. The vast majority of patients who received NT-proBNP-guided care achieved the individually set target.

All patients were followed-up for a minimum of 12 months. A preliminary analysis demonstrated a small but nonsignificant increase in the numbers of days alive outside the hospital among patients in the NT-proBNP-guided group. Similarly, there was a small but nonsignificant reduction in mortality and rates of hospital admission in the NT-proBNP group.

“The need for biomarker-guided management of heart failure is still unfulfilled,” Eurlings said. “We clearly need objective measures that are simple to determine and allow early detection of worsening heart failure, before the patient develops signs and symptoms.”

PRIMA study investigators will also report on the results of a cost-effectiveness analysis.

Dr. Eurlings will present the study “Can Pro-Brain Natriuretic Peptide Guided Therapy of Heart Failure Improve Heart Failure Morbidity and Mortality? Main Outcomes of the PRIMA Study” on Sunday, March 29 at 11:38 a.m. in Hall A2

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The American College of Cardiology (www.acc.org) works to influence health care policy and represents the majority of board certified cardiovascular care specialists through education, research, promotion, and the development and application of standards and guidelines. ACC.09 is the largest cardiovascular meeting, bringing together cardiologists and cardiovascular specialists to share the newest discoveries in treatment and prevention, while helping the ACC achieve its mission to address and improve issues in cardiovascular medicine.