

Simple, inexpensive risk score can shorten length of stay for patients

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A simple-to-use risk score can identify low-risk patients following a severe heart attack (STEMI) and may provide an opportunity to employ early discharge strategies to reduce length of hospital stay and save hospital costs without compromising the safety of the patient, based on a study presented by the Minneapolis Heart Institute Foundation on Oct. 23 at the 2012 Transcatheter Cardiovascular Therapeutics (TCT) conference.

Recently, there has been an emphasis on lowering both hospital length of stay and hospital readmission in patients with severe heart attack, or ST-elevation [myocardial infarction](#) (STEMI), to decrease costs to the overall healthcare system. STEMI patients in the U.S. have lower length of stay in the hospital but increased rates of hospital readmissions compared with other countries.

The Zwolle PCI Risk Index Scoring System is validated to identify low-risk STEMI patients for early discharge. "This is a simple-to-calculate risk score, which takes into account age, three-[vessel disease](#), Killip Class, anterior infarction, ischemic time and TIMI flow post," says the study's senior author Timothy D. Henry, MD, an interventional cardiologist at the Minneapolis Heart Institute® (MHI) at Abbott Northwestern Hospital and director of research with the Minneapolis Heart Institute Foundation. "These risk factors can be easily and quickly assessed by the healthcare professionals within a hospital."

For the study, Craig E. Strauss, MD, MPH, a cardiologist at MHI at

Abbott Northwestern, and colleagues retrospectively applied the Zwolle Risk Score to all STEMI patients presenting to their large, regional STEMI system between January 2009 and December 2011.

Among the 967 cases, 44 percent were classified as high risk and 56 percent as low risk. High-risk patients were older, had more hypertension, diabetes and previous [coronary artery disease](#), were more likely to have had previous [revascularization](#) and had lower left ventricular ejection fractions.

The low-risk patients had statistically significant lower mortality rates than the high-risk patients in the in-hospital setting (0 vs. 11.9 percent), at 30 days (0.2 vs. 12.9 percent) and at one year (3.9 vs. 16.4 percent). Likewise, the low-risk patients had fewer complication rates across the board: any complication (6.5 vs. 17.1 percent), heart failure (0.3 vs. 2.1 percent), cardiogenic shock (0.3 vs. 5.1 percent) or new dialysis (0 vs. 1.7 percent).

"Because there is increasing pressure to reduce rising hospital costs while also reducing readmissions, this study's findings are particularly important," says Dr. Henry. "We found that identifying low-risk patients in an easy, inexpensive manner can lead to safe discharge a full day in advance of the high-risk STEMI patients."

The discharge of one day in advance for these low-risk patients led to a savings of nearly \$7,000 in total hospital costs.

"Prospective use of this risk score may provide an opportunity to safely employ early discharge strategies to reduce length of stay and total [hospital](#) costs without compromising patient safety," the study authors concluded.

"This study's findings have immediately manifested into a change in our

clinical practice. As part of our overall quality improvement program, we are going to use the Zwolle [Risk Score](#) to identify low-risk patients, and these [patients](#) will avoid the cardiac critical care unit and will have a plan to be discharged in 48 hours," adds Dr. Henry. "This change in patient management is the result of the safety findings with this low-risk patient population in the study."

Provided by Minneapolis Heart Institute Foundation

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