

Abstract 10

Primary Author: Tiberio Frisoli, MD

Hospital Affiliation: Henry Ford Hospital, Detroit, MI

Co-Author(s): James McCord, MD

Title: HEART Score in Emergency Room Evaluation of Chest Pain Associated with Marked Reduction in Hospitalization Cost and Length-of-Stay

Background:

The HEART score is a tool intended for use by Emergency Department practitioners in patient with chest pain to discriminate those who would benefit from short-term advanced cardiac testing from those that can be safely discharged without testing. We sought to quantify the reduction in hospitalization cost and length-of-stay that early discharge of low-risk ED chest pain patients confers as compared to standard observation and risk stratification with advanced cardiac testing.

Methods:

Adult Emergency Department patients presenting with symptoms suspicious for Acute Coronary Syndrome without ST-elevation, with two serial troponin measurements 3 or more hours apart both below the 99th percentile ($n = 105$), and with a modified HEART score of 3 or less were randomly assigned in a 1:1 fashion to observation in the clinical decision unit (CDU) for stress testing vs discharge home from the ED. The primary endpoints were total cost (of hospitalization plus care related to index visit out to 30 days) and length of hospitalization. The secondary endpoint was a composite of all-cause death, non-fatal AMI, re-hospitalization for chest pain, and coronary revascularization within 30 days after index discharge, assessed by phone interview and record review.

Results:

Patients randomized to discharge without testing, as compared to those who were admitted for observation +/- advanced cardiac testing, spent a median of 4.09-fold less time in the hospital (9.1 hours vs 27.2 hours; $p < 0.001$), with an associated 3.28-fold reduction in total cost of hospitalization (\$2,897.14 vs \$9,511.79; $P < 0.001$). Though not powered for the secondary endpoint, there was no difference at 30 days in rates of death, acute myocardial infarction, readmission, or revascularization between the two groups. In fact there were no MACE in either group. One patient in each group was lost to follow-up.

Conclusion:

Among patients presenting to the ED with symptoms suspicious for ACS, but ruled out for AMI and with low risk modified HEART score (≤ 3), early discharge without advanced cardiac testing as compared to admission to observation status +/- cardiac testing was associated with 4.09- and 3.18-fold reductions in length of hospitalization and total hospitalization costs, respectively. There were zero 30-day MACE events in either group.