Acute Coronary Syndromes

THE SEATTLE POST-INFACTION MODEL IS HIGHLY PREDICTIVE OF MORTALITY AFTER ACUTE MYOCARDIAL INFARCTION IN PATIENTS FROM INTERMOUNTAIN HEALTHCARE

Poster Contributions
Hall C
Sunday, March 30, 2014, 9:45 a.m.-10:30 a.m.

Session Title: Acute Coronary Syndromes: STEMI
Abstract Category: 1. Acute Coronary Syndromes: Clinical
Presentation Number: 1190-262

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Background: Acute myocardial infarction (MI) is a major cause of death, so determining which post-MI patients are at higher risk may lead to improved quality of care. The Seattle Post-MI Model (SPIM) was created from EPHESUS Trial data and validated in OPTIMAAL. This study evaluated whether SPIM is associated with mortality in a community MI sample from Intermountain Healthcare.

Methods: Consecutive angiography patients with acute MI and data for all 12 SPIM components (N=485) were evaluated. A secondary approach used imputed Killip Class (from clinical diagnosis of heart failure and cardiogenic shock) to increase sample size (N=8,982). Cox regression computed the association of SPIM with mortality at 30 days, 90 days, 6 months, 1 year, and 2 years after discharge. Expected exponential survival rates based on SPIM were calculated using the baseline rates from the EPHESUS derivation sample.

Results: Patients with Killip class averaged 68.9±11.9 years of age, 35.5% were female, and SPIM ranged from -3.3 to 2.7 in decedents (mean -0.6 ±1.0) and -3.8 to 1.8 in survivors (mean -1.4±0.9). Observed (predicted) mortality was 15% (10%), 21% (15%), 24% (20%), 28% (27%), and 32% (36%) at 30 days, 90 days, 6 months, 1 year, and 2 years, respectively. Hazard ratios (HR) for the SPIM association at those times were HR=2.47, 2.41, 2.38, 2.28, and 2.26 per +1 score, respectively (all p<0.001), with c-statistics of c=0.78, 0.76, 0.75, 0.74, and 0.73. For patients with imputed Killip class, age averaged 63.2±13.1 years, 29.9% were female, and SPIM averaged -1.6 ±1.0 in decedents and -2.6 ±0.8 in survivors. Observed (predicted) mortality was 5% (3%), 7% (5%), 8% (7%), 10% (10%), and 12% (14%) at 30 days, 90 days, 6 months, 1 year, and 2 years, respectively. SPIM had HR=2.77, 2.72, 2.69, 2.62, and 2.53 per +1 score at those times (all p<0.001), with c-statistics of c=0.84, 0.83, 0.83, 0.82, and 0.81.

Conclusions: The Seattle Post-MI Model (SPIM) was associated with mortality in a community-based acute MI population from Intermountain Healthcare in Salt Lake City. This demonstrates that SPIM is highly predictive of mortality after MI and should be further compared to TIMI and GRACE post-MI scores for predictive ability and ease of use.