Abstract: P253

Correlation between observed and predicted mortality in patients with cardiogenic shock in an intensive care unit

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Introduction: Acute myocardial infarction (AMI) is one of the main causes of death worldwide, with cardiogenic shock (CS) as a common complication with high mortality rates. Thus, multiple risk-score models have been proposed, being CardShock score one of the most recent and useful prediction models. Nevertheless, there is no external validation of these scores in the Colombian population.

Purpose: To characterize the population outcomes of CS in AMI, and correlate the predicted and the observed mortality according to the CardShock score in an intensive care unit (ICU) in Bogotá, Colombia.

Methods: This retrospective, observational study was conducted between January 2011 to October 2017. Data was collected from a database which included all patients over 18 years old with cardiogenic shock. Patients were excluded if they developed mixed shock, cardiogenic shock after cardiovascular surgery or cardiogenic shock after septic shock. CardShock scores were calculated. The main outcome was all-cause mortality within 30 days from diagnosis of AMI. Secondary outcomes ICU and hospital length of stay (LOS). Between-group comparisons were performed using a Student’s t-test or Mann-Whitney U-test, as appropriate. Associations between independent variables and mortality were assessed using a χ² test. Correlations were made between observed and predicted mortality according to CardShock's Tau B test. A two-sided p-value <0.05 was accepted as statistically significant.

Results: The study included 34 patients, with an overall mortality of 55.9% (n=19). The clinical characteristics on admission to the ER were similar between the deceased and alive group. There was a positive association with glomerular filtration rate <60ml/min (p=0.047), acute kidney injury (p=0.003), cardiopulmonary arrest (p=0.047), withholding or withdrawal of life support (p=0.008), ICU length of stay (p=0.028) and hospital length of stay (p=0.0128) between deceased and alive patients. The observed versus the predicted mortality according to CardShock score revealed similar rates of mortality within the low-risk groups (n=9) with a mortality risk rate of 17.6% versus 8.7% in CardShock scores from 1 to 3. For scores 4 and 5, the predicted mortality risk rate was 36%. However, the observed mortality was 35.3% for score 4 and 17.6% for score 5. In the high-risk group, the predicted mortality was 77%, however, the observed mortality risk rate was 23.5% and 5.9% for score 6 and 7. None of the patients had a Cardshock score of 8 or 9. The correlation between observed mortality and CardShock predicted mortality reports a Kendall's Tau B of 0.167 (P=0.312).

Conclusion: Though the CardShock score easily stratifies risk of short-term mortality, is not feasible to be extrapolated to our intermediate-risk population due to a non-significant correlation between observed and predicted mortality.
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Observed vs. expected mortality according to CardShock score

![Graph showing observed vs. expected mortality according to CardShock score](image-url)