Predictors of 30-day mortality in ST-Elevation Myocardial Infarction (STEMI) patients

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ABSTRACT
Background: to identify other factors other than the TIMI scores that can be used as predictors of 30-day mortality in STEMI patients by including variables of left ventricle ejection fraction (LVEF) and glomerulus filtration rate (GFR) at Cipto Mangunkusumo National Central General Hospital. Methods: a retrospective cohort study was conducted in 487 STEMI patients who were hospitalized at RSUPN Cipto Mangunkusumo between 2004 and 2013. Sample size was calculated using the rule of thumbs formula. Data were obtained from medical records and analyzed with bivariate and multivariate method using Coxs Proportional Hazard Regression Model. Subsequently, a new scoring system was developed to predict 30-day mortality rate in STEMI patients. Calibration and discrimination features of the new model were assessed using Hosmer-Lemeshow test and area under receiver operating characteristic curve (AUC). Results: bivariate and multivariate analyses showed that only two variables in the new score system model were statistically significant, i.e. the Killip class II to IV and GFR with a range of total score between 0 and 4,6. Thirty-day mortality risk stratification for STEMI patient included high, moderate and low risks. The risk was considered high when the total score was >3,5 (46,5%). It was considered moderate if the total score was between 2,5 and 3,5 (23,2%) and low if the total score was <2,5 (5,95%). Both variables of the score had satisfactory calibration (p > 0,05) and discrimination (AUC 0,816 (0,756-0,875; CI 95%). Conclusion: There are two new score variables that can be used as predictors of 30-day mortality risks for STEMI patients, i.e. the Killip class and GFR with satisfactory calibration and discrimination rate.