Journal of the Medical Association of Thailand, Vol 96, No 2

Validation of the GRACE Risk Score to Predict in-Hospital Mortality in Patients with ST Segment Elevation Myocardial Infarction in Thailand

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Abstract

Background: The GRACE risk score (GRS) is a validated risk score to predict mortality in acute coronary syndrome patients. However, data on the use of the GRS in Asian patients are limited. The authors assessed the validity of this risk score in a contemporary cohort of patients with ST segment elevation myocardial infarction (STEMI) admitted to a tertiary care hospital in Thailand.
Material and Method: From June 1, 2008 through May 31, 2010, 209 consecutive patients with STEMI were prospectively enrolled. The GRS was calculated for each patient. Patients were stratified into three GRACE risk tertiles: high, intermediate and low risk groups. In-hospital mortality rate was assessed and compared to the GRS predicted mortality.
Results: The mean GRS was 161 + 46.2 and the overall in-hospital mortality was 12.4%. Using the GRS, 103 (49.3%) patients were stratified to the high-risk group (> 155 points), 59 (28.2%) patients to the intermediate-risk group (126-154 points) and 47 (22.5%) patients to the low-risk group (< 125 points). The observed in-hospital mortality rate was 23.3% (95% CI 16.2-32.3) in the high-risk group and 3.4% (95% CI 0.94-11.5) in the intermediate-risk group. None of the patients in the low risk group died, 0% (95% CI 0-7.9) ($p < 0.001$, low risk vs. high risk; $p = 0.001$ intermediate risk vs. high risk)
Conclusion: Use of the GRS in STEMI patients for predicting in-hospital mortality was validated. At the author's institute, the GRS is a useful tool to predict in-hospital death in STEMI patients.

Keywords: Acute coronary syndrome, ST-segment elevation myocardial infarction, GRACE, Risk stratification

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