Abstract: P2269

IABP-SHOCK II risk score validation for cardiogenic shock after myocardial infarction in a cohort treated with pharmaco-invasive therapy

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Topic(s):
Acute Coronary Syndromes: Shock

Citation:
Background: Risk stratification using scores is a valuable tool in cardiogenic shock after ST elevation myocardial infarction (STEMI). During pharmacoinvasive therapy (PIT) their use is unexplored in the literature. Objective: To validate the IABP-SHOCK II (Intra-aortic Balloon Pump in Cardiogenic Shock) score in patients treated with PIT and to analyze the influence of ischemia time on the different risk strata. Methods and results: Of 2,143 STEMI patients seen between May 2010 and April 2017, 212 (9.9%) developed cardiogenic shock. Thirty-one patients (14.6%) with incomplete data were excluded from the analysis and the validation cohort included the remaining 181. Mortality rates were similar between the analyzed and excluded patients (42.5% and 45.1% respectively, p = 0.77). The 30-day mortality using the IABP-SHOCK II score was 26.6% for low-risk (n = 94), 53.2% for moderate-risk (n = 62), and 76% for high-risk (n = 25) (p <0.001). The validation of the score showed good discrimination for death, with an area under the curve of 0.73 (95% confidence interval 0.66 to 0.81 p <0.001). Although pain-to-needle time was significantly longer in patients who died within 30 days (251 min, interquartile range 140-528 vs. 210 min, interquartile range 130-343, p = 0.032), the median intervals of pain-to-needle and fibrinolytic-catheterization showed no association with the group stratification (220 vs 251 vs 200 min; p = 0.22 and 390 vs 435 vs 315 min; p = 0.18, respectively). This finding may be explained by the potential of these variables to be more closely associated with the development of cardiogenic shock in STEMI patients treated with PIT, and to be less associated with progression to death when the patient is already in shock. Conclusion: In patients with cardiogenic shock after STEMI treated with PIT, risk stratification using the IABP-SHOCK II score was adequate. There was no influence of pain-to-needle and fibrinolytic-catheterization times on the ability to the score model stratification.
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Methods and results: Of 2,143 STEMI patients seen between May 2010 and April 2017, 212 (9.9%) developed cardiogenic shock. Thirty-one patients (14.6%) with incomplete data were excluded from the analysis and the validation cohort included the remaining 181. Mortality rates were similar between the analyzed and excluded patients (42.5% and 45.1% respectively, p = 0.77). The 30-day mortality using the IABP-SHOCK II score was 26.6% for low-risk (n = 94), 53.2% for moderate-risk (n = 62), and 76% for high-risk (n = 25) (p <0.001). The validation of the score showed good discrimination for death, with an area under the curve of 0.73 (95% confidence interval 0.66 to 0.81 p <0.001).

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Conclusion: In patients with cardiogenic shock after STEMI treated with PIT, risk stratification using the IABP-SHOCK II score was adequate. There was no influence of pain-to-needle and fibrinolytic-catheterization times on the ability to the score model stratification.

Points (max 9)
1: Age > 73 years
1: Glucose > 191 mg/dl
1: Creatinine > 1.5 mg/dl
2: Lactate > 45 mg/dl
2: TIMI flow post-PCI < 3
2: Previous stroke

Pairwise Log-Rank
0-2 vs 3-4 p < 0.001
0-2 vs 5-9 p < 0.001
3-4 vs 5-9 p = 0.023

IABP-SHOCK II Score
(n = 181)

Time (days)
Mortality (%)
High risk (5-9): n 25
Moderate risk (3-4): n 62
Low risk (0-2): n 94