Abstract: P838

Is multi-biomarker combination approach comparable to the GRACE risk score for short-term mortality prediction in acute myocardial infarction cases?

Authors:
Y Kawamura¹, F Yoshimachi¹, N Nakamura¹, S Minakawa¹, Y Yamamoto¹, N Morita¹, Y Kobayashi¹,¹Tokai University Hachioji Hospital - Hachioji - Japan,

Topic(s):
Coronary Artery Disease – Epidemiology, Prognosis, Outcome

Citation:

Introduction:
The Global Registry of Acute Coronary Events (GRACE) score is said to be a superior predictor of mortality in acute myocardial infarction (AMI) patients, and same applies to biochemical parameters as N-terminal pro-B-type natriuretic peptide (N-BNP), Troponin-T (TnT) and high-sensitivity C-reactive protein (hs-CRP) levels.

Purpose:
We validated that whether each or combination of biochemical parameters are comparable to GRACE score or not for mortality prediction in AMI patients.

Method:
We investigated about clinical background including The GRACE score, above parameters and in-hospital mortality in 754 AMI patients (mean age 66±13y/o, 609 ST-elevated AMI cases) received emergency percutaneous coronary intervention (PCI) successfully during 8 years in a single center retrospectively. Combination of biochemical parameters are derived from N-BNP, TnT and hs-CRP by logistic regression analyses. We compared The GRACE score with each or combination of biochemical parameters between survival (SG) and non-survival group (nSG) on receiver operating characteristic (ROC) analysis.

Result:
In-hospital mortality was 6.8%. The GRACE score (106±33 versus 161±32; p<0.005) and N-BNP level (2458±7058 versus 8880±11331pg/ml; p<0.005) were significantly lower in SG than nSG. Area under the ROC curve about in-hospital mortality of The GRACE score were higher (0.868) than N-BNP (0.787;p=0.007), TnT (0.613;p<0.005) , hs-CRP levels(0.614;p<0.005) and multi-biomarker combination (0.742;p=0.016) as Figure 1. Area under the curve of the composite with the GRACE score and multi-biomarker is not increased compared with the GRACE score alone. (0.868 versus 0.865; p=n.s.)

Conclusion:
The GRACE score is a superior predictor about in-hospital mortality than each or combination of biochemical parameters in AMI patients. Multi-biomarker combination dose not refine the accuracy of the GRACE score.
Is multi-biomarker combination approach comparable to the GRACE risk score for short-term mortality prediction in acute myocardial infarction cases?

Authors: Y Kawamura1, F Yoshimachi1, N Nakamura1, S Minakawa1, Y Yamamoto1, N Morita1, Y Kobayashi1

1Tokai University Hachioji Hospital - Hachioji - Japan

Purpose: We validated whether each or combination of biochemical parameters are comparable to GRACE score or not for mortality prediction in AMI patients.

Method: We investigated about clinical background including The GRACE score, above parameters and in-hospital mortality in 754 AMI patients (mean age 66±13y/o, 609 ST-elevated AMI cases) received emergency percutaneous coronary intervention (PCI) successfully during 8 years in a single center retrospectively. Combination of biochemical parameters are derived from N-BNP, TnT and hs-CRP by logistic regression analyses. We compared The GRACE score with each or combination of biochemical parameters between survival (SG) and non-survival group (nSG) on receiver operating characteristic (ROC) analysis.

Result: In-hospital mortality was 6.8%. The GRACE score (106±33 versus 161±32; p<0.005) and N-BNP level (2458±7058 versus 8880±11331pg/ml; p<0.005) were significantly lower in SG than nSG. Area under the ROC curve about in-hospital mortality of The GRACE score were higher (0.868) than N-BNP (0.787; p=0.007), TnT (0.613; p<0.005), hs-CRP levels (0.614; p<0.005) and multi-biomarker combination (0.742; p=0.016) as Figure 1.

Conclusion: The GRACE score is a superior predictor about in-hospital mortality than each or combination of biochemical parameters in AMI patients. Multi-biomarker combination does not refine the accuracy of the GRACE score.