Association of admission blood glucose to albumin ratio and clinical outcomes in patients with ST-elevation myocardial infarction undergoing percutaneous coronary intervention

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Background: It is unclear whether admission blood glucose to albumin ratio (AAR) predicts clinical adverse outcomes in patients with ST-segment elevation myocardial infarction (STEMI) treated with percutaneous coronary intervention (PCI).

Purpose: Here, we explored the predictive value of AAR.

Methods: Patients diagnosed with STEMI undergoing PCI between January 2010 and February 2020 were enrolled. The patients were classified into three groups according to AAR quantiles. In-hospital all-cause mortality was regarded as the primary outcome. Logistic regression, Kaplan-Meier analysis and Cox proportional hazard regression were mainly used to estimate outcomes.

Results: Among the 3,224 enrolled patients, 130 (3.9%) of them suffered in-hospital all-cause mortality and 181 (5.4%) experienced major adverse cardiac events (MACEs). After the adjustment, multivariate analysis demonstrated that an increase in AAR was associated with the increased risk of in-hospital all-cause mortality (adjusted OR: 2.72, 95% CI: 1.47–5.03, p = 0.001) and MACEs (adjusted OR: 1.91, 95% CI: 1.18–3.10, p = 0.009), as well as for long-term all-cause mortality (adjusted HR: 1.64, 95% CI: 1.19–2.28, p = 0.003) and MACEs (adjusted HR: 1.58, 95% CI: 1.16–2.14, p = 0.003). ROC analysis indicated that AAR could accurately predict in-hospital all-cause mortality (AUC = 0.718, 95% CI: 0.675–0.761) and MACEs (AUC = 0.672, 95% CI: 0.631–0.712).

Conclusions: AAR is a novel and convenient independent predictor of all-cause mortality and MACEs both at the in-hospital and long-term levels in STEMI patients receiving PCI.

ROC curve of AAR

Kaplan–Meier survival curves