Prediction model of in-hospital adverse cardiac events in patients with heart failure

Kunlun He and Qian Jia
Chinese PLA General Hospital, China

Objectives: Early prediction and identification of the onset of adverse cardiac events in high-risk patients are of great significance for preemptive treatment and a better prognosis. We sought to establish a risk evaluation model to predict the adverse cardiac events during hospitalization in patients with heart failure (HF).

Methods: In-hospital, patients with HF was randomly selected from intensive care units of Chinese PLA General Hospital. Patients were then allocated into model derivation group and validation group, respectively. In the derivation group, independent risk factors for adverse cardiac events were evaluated by multivariate logistic regression. We established a prediction score system using the independent risk factors. In the validation group, receiver operator characteristic curve (ROC) and C-statistic testing were utilized to assess the performance of the constructed model in comparison with a previous published Modified Early Warning Score (MEWS) model.

Results: The binary logistic regression analysis revealed that the level of heart rate, left ventricular ejection fraction, pH value, renal dysfunction and NT-pro BNP are independent risk factors of adverse cardiac events during hospitalization for HF patients. The effectiveness of our risk prediction score system (PSS) is better than modified early warning score (MEWS) system.

Conclusions: Through data analysis of patients with heart failure, we found heart rate, left ventricular ejection fraction, pH value, renal dysfunction and NT-pro BNP were closely associated with adverse cardiac events during hospitalization. It has important significance for the precision risk stratification of in-hospital patients with heart failure.

Biography
Kunlun He has completed his Medical School degree from The Third Military Medical University, PhD from Chinese PLA Medical School, and Post-doctoral studies from College of Physicians and Surgeons of Columbia University. He is the Vice President of Chinese PLA General Hospital, and the Professor of Department of Cardiology. In recent years, he focuses on Translational Medicine of Cardiovascular disease. He has published more than 158 peer reviewed papers, achieved the first class awards of Beijing Science and Technology, and also has been serving as Editorial Board Members for three medical journals.

tianyp@301hospital.com.cn

Notes: