The Singapore Heart Failure Risk Score—Jonathan Yap et al

Abstract

Introduction: Numerous heart failure risk scores have been developed but there is none for Asians. We aimed to develop a risk calculator, the Singapore Heart Failure Risk Score, to predict 1- and 2-year survival in Southeast Asian patients hospitalised for heart failure. Materials and Methods: Consecutive patients admitted for heart failure were identified from the Singapore Cardiac Databank Heart Failure registry. The follow-up was 2 to 4 years and mortality was obtained from national registries. Results: The derivation (2008-2009) and 2 validation cohorts (2008-2009, 2013) included 1392, 729 and 804 patients, respectively. Ten variables were ultimately included in the risk model: age, prior myocardial infarction, prior stroke, atrial fibrillation, peripheral vascular disease, systolic blood pressure, QRS duration, ejection fraction and creatinine and sodium levels. In the derivation cohort, predicted 1- and 2-year survival was 79.1% and 68.1% compared to actual 1- and 2-year survival of 78.2% and 67.9%. There was good agreement between the predicted and observed mortality rates (Hosmer-Lemeshow statistic = 14.36, \( P = 0.073 \)). C-statistics for 2-year mortality in the derivation and validation cohorts were 0.73 (95% CI, 0.70-0.75) and 0.68 (95% CI, 0.64-0.72), respectively. Conclusion: We provided a risk score based on readily available clinical characteristics to predict 1- and 2-year survival in Southeast Asian patients hospitalised for heart failure via a simple online risk calculator, the Singapore Heart Failure Risk Score.

Key words: Asia, Heart failure, Mortality


Address for Correspondence: Dr Jonathan Yap, Department of Cardiology, National Heart Centre, 5 Hospital Drive, Singapore 169609. Email: jonathan.yap.j.l@singhealth.com.sg