

The Singapore Heart Failure Risk Score: Prediction of Survival in Southeast Asian Patients

Jonathan Yap,¹MBBS, MRCP, Shaw Yang Chia,¹BSc, Fang Yi Lim,¹MBBS, John C Allen,^{1,2}PhD, Louis Teo,¹MBBS, MRCP, David Sim,¹MBBS, MRCP, Yun Yun Go,¹MBBS, MRCP, Fazlur Rehman Jaufeerally,^{2,3}MBBS, MRCP, Matthew Seow,²MSc, Bernard Kwok,⁴MBBS, MRCP, Reginald Liew,²MBBS, MRCP, Carolyn SP Lam,^{1,2}MBBS, MS, Chi Keong Ching,^{1,2}MBBS, MRCP

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.

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¹Department of Cardiology, National Heart Centre, Singapore

²Duke-NUS Medical School, Singapore

³Department of Internal Medicine, Singapore General Hospital, Singapore

⁴Kwok Cardiology Clinic, Singapore

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