
**BACKGROUND:** Patients with chronic heart failure (CHF) have a continuing high mortality. Autonomic dysfunction may play an important role in the pathophysiology of cardiac death in CHF. UK-HEART examined the value of heart rate variability (HRV) measures as independent predictors of death in CHF.

**METHODS and RESULTS:** In a prospective study powered for mortality, we recruited 433 outpatients 62 +/- 9.6 years old with CHF (NYHA functional class I to III; mean ejection fraction, 0.41 +/- 0.17). Time-domain HRV indices and conventional prognostic indicators were related to death by multivariate analysis. During 482 +/- 161 days of follow-up, cardiothoracic ratio, SDNN, left ventricular end-systolic diameter, and serum sodium were significant predictors of all-cause mortality. The risk ratio for a 41.2-ms decrease in SDNN was 1.62 (95% CI, 1.16 to 2.44). The annual mortality rate for the study population in SDNN subgroups was 5.5% for >100 ms, 12.7% for 50 to 100 ms, and 51.4% for <50 ms. SDNN, creatinine, and serum sodium were related to progressive heart failure death. Cardiothoracic ratio, left ventricular end-diastolic diameter, the presence of nonsustained ventricular tachycardia, and serum potassium were related to sudden cardiac death. A reduction in SDNN was the most powerful predictor of the risk of death due to progressive heart failure.

**CONCLUSIONS:** CHF is associated with autonomic dysfunction, which can be quantified by measuring HRV. A reduction in SDNN identifies patients at high risk of death and is a better predictor of death due to progressive heart failure than other conventional clinical measurements. High-risk subgroups identified by this measurement are candidates for additional therapy after prescription of an ACE inhibitor.