SUMMARY

BACKGROUND

It is known that heart rate variability (HRV), a measure of the beat-to-beat variation in heart rate, reduces in congestive heart failure. Reduced heart rate variability is a measure of the degree of autonomic dysfunction in heart failure and is a prognostic marker for increased morbidity and mortality. Heart rate variability measures are still being studied and have not yet been incorporated in the routine of the management of patients with congestive heart failure.

OBJECTIVES

The study was carried out to obtain and analyze time and frequency domain intervals from 24-hour ECG recordings in patients with congestive cardiac failure as well as normal individuals, and to determine if HRV parameters correlate with measures of severity in heart failure.

METHODS

Trans-thoracic echocardiography as well as 24-Hour Holter ECG monitoring was carried out on seventy-four (74) patients with congestive cardiac failure and fifty-nine (59) normal controls. Time domain and frequency domain HRV measures were obtained, analyzed and compared between the cases and the controls.
RESULTS

HRV measures were significantly reduced in the heart failure patients compared with normal controls. This noted reduction is obtainable even after adjusting for age differences between cases and controls. Reduction in HRV measures (both time and frequency domain measures) is more prominent with increasing severity of heart failure as measured by left ventricular ejection fraction.

CONCLUSION

HRV measures are depressed in black African patients with CHF compared with healthy subjects. This noted reduction is obtainable even after adjusting for age differences between CHF cases and healthy controls. Reduction in HRV measures (both time and frequency domain measures) is more prominent with increasing severity of heart failure as measured by declining ejection fraction. Though 24-Hour Holter ECG monitoring has not yet become part of the routine for the work up of patients with CHF, severely ill patients, particularly those with arrhythmias and marked systolic dysfunction, may require assessment of HRV, as this class of patients have been shown to benefit from implantable cardiac device therapies.