

## Heart failure and left ventricular function

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### THE PROGNOSTIC VALUE OF RIGHT VENTRICULAR END-DIASTOLIC DIAMETER IN PATIENTS WITH CHRONIC SYSTOLIC HEART FAILURE

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**Aims** To determinate whether right ventricular end-diastolic diameter (RVDD) was an independent and specific prognosis predictor of chronic systolic heart failure (CSHF).

**Methods and results** 16681 patients, diagnosed with CSHF, from 12 hospitals were analysed. Patients were categorised into four RVDD groups: <20 mm (n=4170), 20–32 mm (n=4170), 32–42 mm (n=4170) and ≥42 mm (n=4171). Univariate and multivariate Cox proportional hazards analyses were performed to examine the risk of all-cause death, cardiovascular death, death because of heart failure (HF) progress and sudden cardiac death (SCD) in different RVDD groups. The sensitivity and specificity of RVDD in predicting the prognosis were examined by multivariate Cox models and receiver operating characteristic (ROC) curves. Over media 5 years follow-up, compared with patients with RVDD<20 mm, adjusted HR for those with RVDD 20–32 mm, 32–42 mm and ≥42 mm were 5.84 (5.06–6.74; p<0.001), 7.84 (6.83–8.99; p<0.001) and 11.14 (9.72–12.76; p<0.001), for all-cause mortality, respectively; 6.63 (5.68–7.73; p<0.001), 8.98 (7.74–10.41; p<0.001) and 11.06 (9.54–12.81; p<0.001) for cardiovascular mortality, respectively; 6.63 (5.68–7.73; p<0.001), 8.98 (7.74–10.41; p<0.001) and 11.06 (9.54–12.81; p<0.001), for HF mortality, respectively; 3.03 (1.98–4.65; p<0.001), 3.22 (2.14–4.84; p<0.001) and 12.38 (8.47–18.10; p<0.001), for SCD, respectively. The ROC curves showed the RVDD increased sensitivity of predicting models for all-cause mortality, cardiovascular mortality, HF mortality and SCD.

**Conclusions** RVDD≥20 mm can be used as a marker of poor prognosis in patients with CSHF. RVDD≥42 mm has an significant intrinsic association with increased risk of SCD. RVDD can increase the sensitivity in predicting all-cause mortality cardiovascular mortality, HF mortality and SCD.