INCREMENTS AL PROGNOSTIC VALUE OF CARDIAC MAGNETIC RESONANCE FOR THE PREOPERATIVE ASSESSMENT OF PATIENTS WITH ISOLATED SEVERE TRICUSPID REGURGITATION

Background: There has been no data exploring the role of cardiac magnetic resonance (CMR) in the preoperative assessment of isolated severe tricuspid regurgitation (TR).

Methods: Prospectively collected data included CMR, functional capacity, laboratory tests, and clinical events over the follow-up in 75 consecutive patients with isolated severe TR.

Results: During a median follow-up of 57 (range, 21-82) months, cardiac and all-cause mortality were 17.3% and 26.7%, respectively, with an operative mortality of 6.7%. Right ventricular ejection fraction (RV-EF) on CMR (hazard ratio [HR] per 5% increase=0.714, p=0.029), hemoglobin (HR per 0.1g/dL increase=0.586, p=0.005) and glomerular filtration rate (GFR) (HR per 5mL/min/1.73m² increase=0.807, p=0.011) emerged as independent predictors of cardiac death. The addition of RV-EF to NYHA class significantly improved the prediction of cardiac death (p=0.041), which was further improved by addition of hemoglobin and GFR (p=0.004). Although the NYHA class did not survive multivariate analysis, no cardiac death was observed in patients with both RV-EF ≥46.2% and NYHA class I-II, whereas it was 2 of 8 patients (25%) with NYHA class I-II but RV-EF <46.2% (p=0.014).

Conclusion: Preoperative assessment of CMR-based RV-EF, hemoglobin, and GFR provides prognostic information in patients undergoing corrective TR surgery. Combined with the NYHA class, preoperative monitoring of these 3 factors can allow for determining optimal surgical timing.