Oral MO-7

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Corrected tetralogy of fallot: Usefulness of low dose dobutamine stress MR imaging for the assessment of pulmonary regurgitation and biventricular function

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Purpose: To assess the responses of pulmonary regurgitation (PR) and biventricular function by using a low dose dobutamine stress magnetic resonance (MR) imaging in young adult patients who underwent tetralogy of Fallot repair at a young age.

Materials and Methods: Ten patients with corrected tetralogy of Fallot (mean age, 13.9 years ± 3.5 [SD]) underwent MR imaging at rest and stress for the evaluation of PR and biventricular function. Mean age at tetralogy of Fallot repair was 2.3 years ± 1.5, and mean follow-up time after repair was 11.4 years ± 2.9. The parameters of cardiac function obtained MR imaging at rest and low dose DSMR were compared by using a paired *t* test.

Results: PR decreased during low dose DSMR (from 29.1 mL/m2 ± 11 to 25.4 mL/m2 ± 9). At rest, right ventricular (RV) ejection fraction was normal (>47%) in 80% of patients. RV response during low dose DSMR showed decreased RV end-systolic volume index (106.84 mL/m2 ± 34 to 89.6 mL/m2 ± 28) and increased RV ejection fraction (50.47 ± 11.7%, 56.1 ± 11.7%). End-diastolic volume index showed no significant change. In only one patient, RV ejection fraction decreased by more than 5%.

Conclusion: Low dose dobutamine stress MR imaging is well suited to assess cardiac response to exercise-like effect, and it maybe useful for the evaluation of abnormal RV response during stress condition in patients with corrected tetralogy of Fallot.