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**MRI evaluation of coronary anatomy and myocardial perfusion after arterial switch for transposition of great arteries**

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Background : Coronary arteries obstruction is the main cause of mortality and morbidity in patients who underwent arterial switch for transposition of the great arteries (TGA). Long-term outcome of coronary transfer and its consequences on myocardial perfusion is scarcely known.

Objective: To evaluate feasibility of cardiac MRI to describe coronary anatomy, myocardial perfusion and fibrosis after arterial switch for TGA.

Methods: 90 patients (mean age 13.5 y) were included. Twenty-five/90 had had previously documented coronary artery obstruction. cMRI protocol included cine SSFP in short axis, two-chamber, three and four chamber view, and perfusion analysis before and after dipyridamole infusion. Anatomy was evaluated by 3D heart sequence in 57 patients. Finally, late enhancement was evaluated ten minutes after injection of contrast agent in 50 patients.

**Results**

Perfusion could always be evaluated in this series of patients. No perfusion defect was identified but none of the 90 patient had a positive test for myocardial ischemia before cMRI. All patients with prior negative myocardial ischemia test had normal perfusion on MRI even those with mild to moderate coronary stenosis. Anatomical evaluation of proximal coronary arteries was possible in 50/57 patients. Finally, we found limited myocardial fibrosis in only two/50 patients who had left coronary artery obstruction that had been repaired.

**Conclusion**

cMRI is feasible and gives complementary informations on coronary artery anatomy and physiology after the arterial switch operation for TGA. Use of cMRI as a screening tool for late coronary artery obstruction in this condition has to be evaluated in large series of patients to obtain informations on its sensitivity and specificity.