Arrhythmias and heart failure in adults with isolated corrected Transposition of the Great Arteries

Walton C., Martin-Bonnet C., Bozio A., Chakoub S., Galoin Bertail C., Perouse de Montclos T., Bakloul M., Durouset C., Leconte C., Di Filippo S.
Pediatric Cardiology, Cardiovascular Hospital, Lyon, France

The objective of this study was to assess arrhythmias and heart failure occurrence in adults with isolated corrected TGA (ccTGA).

Material and Methods: All patients diagnosed with ccTGA at a single-center, were included in the study. Clinical data, echocardiographic parameters and outcomes were collected. All arrhythmic and/or heart failure (HF) events were recorded. Pronostic factors for poor outcome were assessed.

Results: 30 males and 25 females, aged 16.7±18.4y at diagnosis of ccTGA and followed-up for 17.9±12.7y, were included in the study. Mild lesions were associated in 23 cases (small VSD, mild pulmonary valve stenosis, small ASD, mild isthmus stenosis). Complete AV block occurred in 7 cases (13%). NYHA class I, II, III and IV at onset was respectively: 70%, 18%, 7% and 3.6%, and a end-follow-up was respectively: 31%, 38%, 24% and 6.7% at end-FU. Systemic right ventricle function at onset FU was normal on 87% of cases, moderately impaired in 13% and none had severe RV dysfunction, and changed to respectively 73%, 18% and 9% at end-FU. Tricuspid regurgitation was grade 0, 1, 2 or 3 in 33%, 49%, 9% and 9% of cases respectively at onset FU and in 13%, 48%, 24% and 16% of cases at end-FU respectively. Symptoms of HF occurred in 8 cases (14.5%) at the age of 37.5±13.7y (7 to 61y), AVB occurred in 20 (36.4%) at age 31.4±19.4y (5 to 72y) and arrhythmias in 16 (29%), over FU. RV dysfunction was associated with TR grade (p=0.025), and HF with TR grade (p=0.015) and pacemaker implantation (p=0.026). Freedom for onset of HF was 50% at mean age of 36 years.

Conclusion: Patients with isolated ccTGA experience worsening of RV function and TR grade, and frequent arrhythmic and HF events over twenty years of follow-up.