

Atria volume ratio as a simple echocardiographic parameter that might be useful in corrected Tetralogy of Fallot evaluating the timing for re-intervention in this population.

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Introduction: ToF is one of the most frequent complex congenital heart defect that we encounter in our every-day-life ambulatory activity. MRI is the unquestioned diagnostic tool to evaluate the right timing for percutaneous valve replacement but it costs, and is not always easy available.

Aim: to find out simple parameters that might be useful to better predict a significant RV dilatation and dysfunction in this population.

Methods: Each patient undergone physical examination, timing of radical correction and history of previous BT shunt palliation, ECG, Echocardiogram and Cardiopulmonary test. About ECG findings it was possible to compare prospectively a "basal" one (the first after surgery), ECG1, and the most recent one, (ECG2). QRS duration (QRSd) was one of the main independent variable. In this analysis patients in natural history and with pulmonary atresia + interventricular septum defect were excluded.

Results: Total population was 76 patients. 42 females and 34 males with a mean age of 19 ± 14 years. 59 patients had classic type of ToF, a half received a radical correction before 6 months of age. ECG mean follow-up was $8,2 \pm 4$ y in 45 patients

Only 7 patients received a BT shunt palliation before: two in the group of early correction and 5 in the group of late correction. The statistically interesting findings of this work were: QRS widening strongly correlates with time of correction, age, pulmonary insufficiency, peak VO₂ and indexed RV telediastolic volume (in our population, an indexed TDV of 70 ml/mq, at echo calculation, correlates significantly with a > 140 msec QRS widening). A strong correlation between the atrial volume ratio (RA/LA) >1.7 a more reproducible parameter than ventricle volumes, and QRSd was found ($p=0.007$).

Conclusion: ToF patients have a good life expectancy, however, they experiments soon or later arrhythmic problems and right heart failure appear. The criteria for re-intervention based on MRI are the gold standard but is not always easily available. Together with what already stated such as QRS widening >140 msec, RA/LA volume ratio and RV TDV >70 ml/mq echo measured might be an added parameter for follow-up and timing for valve replacement