

Meeting abstract

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1064 Evaluation of postoperative pulmonary regurgitation after surgical repair of tetralogy of Fallot: comparison between Doppler-echocardiography and MR velocity mapping

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Introduction

PI is a common finding in patients after corrected tetralogy of Fallot (TOF). Right ventricular impairment and even ventricular arrhythmia have been described due to a high degree PI, which is therefore an important issue in follow-up examinations.

Purpose

To compare pulmonary valve insufficiency (PI) measured by echocardiography with data provided by cardiovascular magnetic resonance imaging (CMR).

Methods

We studied 54 (18 females) selected patients (median age 14.0 years, range 3.8 to 53.4 years) after surgically corrected TOF. To quantify pulmonary regurgitant fraction (PRF) in CMR, a flow velocity mapping was performed. In Doppler echocardiography length, width and localisation of regurgitant flow was measured. Results were categorized as mild, moderate and severe degree of PI and compared to the data obtained by CMR.

Results

In CMR mean PRF was 29.2% (\pm 13.4). Patients with a transannular patch had a significantly higher PRF (39.9% \pm 11.6) than pts. with an intact annular ring (23.6% \pm 11.4). Differentiation by Doppler echocardiography between the categories mild, moderate and severe PI was confirmed by significant differences in PRF measured by CMR (mild vs. moderate $p < 0.04$, moderate vs. severe $p <$

0.014, mild vs. severe $p < 0.001$). Furthermore PRF correlated with right ventricular end diastolic volume index (RV-EDVI) ($r = 0.45$, $p < 0.01$) and right ventricular end systolic volume index (RV-ESVI) ($r = 0.39$, $p < 0.01$).

Conclusion

Doppler echocardiography can estimate severity of pulmonary insufficiency after repaired tetralogy of Fallot with acceptable results compared to CMR flow measurement. In univariate analysis there is only a weak influence of RF on right ventricular volumes.