

Exercise Limitation in Children after Tetralogy of Fallot Repair Is Not related to Right Ventricular Dysfunction: Single Egyptian Center Experience

Fatma Alzahraa

Professor & Head of the Echocardiography department, Cairo University

Aim of work:

To assess exercise capacity and right ventricular diastolic dysfunction in children after TOF repair.

Methods:

Cross sectional descriptive study was conducted on 27 cases with TOF after total surgical repair. Cases were subjected to 12 leads ECG, chest X-ray, 6-minute walking test (6MWT) to assess the exercise capacity and transthoracic color Doppler echocardiography with assessment of right ventricle myocardial performance index (RVMPI) and pulmonary regurgitation index (PRi).

Results:

The mean \pm SD age of the our studied was TOF patients 6.59 ± 1.80 years. The mean \pm SD age at operation was 2.46 ± 0.95 years. All had dilated right ventricle (right ventricle dilatation index RVDi > 0.5), and moderate to severe pulmonary regurg (PR) estimated by PRi (PRi < 0.77).

Impaired RVMPI (> 0.32) was found in 6 (22%) patients. Exercise capacity measured by 6-MWT was significantly reduced compared to the normal population of the same age group ($p = 0.001$). Results of 6-MWT did not correlate with the RVMPI ($p = 0.44$, $r = -0.077$), the PRi ($p = 0.83$, $r = 0.006$), QRS ($p = 0.31$, $r = 0.066$), or corrected QT interval ($p = 0.89$, $r = 0.169$).

Conclusion:

Exercise capacity was limited in our TOF patients after surgical repair, that was not related to right ventricular diastolic dysfunction as it did not correlate with RVMPI, degree of PR, QRS duration, nor corrected QT interval.

Keywords

Tetralogy of Fallot (TOF); right ventricular dysfunction; exercise capacity; 6-minute walking test; children