

Long-term follow-up in patients after Tetralogy of Fallot repair: 20 years single-centre experience

*Kantorova A., Kaldararova M., Beerova N., Valentik P., Nosal M.
National Institute of Cardiovascular Diseases – Children's Cardiac Centre, Bratislava, Slovakia*

Introduction:

Tetralogy of Fallot (TOF) is the most common cyanotic heart defect with long-term survival after complete correction. The aim of our single-centre whole-country study was to evaluate results and late complications after complete correction.

Methods:

Performed was retrospective analysis of TOF patients, who underwent correction at our institution in the period 1992-2002 and were at least 15 years after complete surgical repair. Included were 181 patients, median follow-up 21.8 years (16-25 years). Serial complete cardiology examinations were performed.

Results:

Overall freedom from re-do was 64.6%.

Early reinterventions were needed in 23 patients (12,7%): residual shunt closure in 4, right ventricular (RV) outflow tract obstruction relief in 8, pulmonary artery branch balloon dilatation and/or stent implantation in 11 patients; median time 3.6 years (8 months-4.8 years) post complete correction.

Late reoperation (pulmonary conduit implantation) was performed in 22 patients (12.2%), with median of 16.7 years (8.6-20.5 years) after complete correction.

Clinically relevant arrhythmias were found in 29 patients (16.1%); 13 patients (7.2%) needed long-term anti-arrhythmic medication, 4 electrical cardioversion, and 1 an ICD implantation.

Transannular patch (TAP) was a significant risk factor for: severe pulmonary regurgitation with RV dilatation ($p=0.0002$), for pulmonary conduit implantation ($p<0.0001$), as well as for the presence of hemodynamically considerable ventricular arrhythmias ($p=0.008$). TAP with secondary right atrial dilatation correlated also with the presence of severe atrial arrhythmias ($p=0.036$).

In patients with isolated RV outflow tract aneurysm significantly lower global RV function (as measured by MRI) was found ($p=0.027$). In 71.4% of these patients, the decreased RV function ($EF<40\%$) established by MRI, was not confirmed by echocardiography.

Conclusions:

Clinical findings in TOF patients after definitive surgical correction are very good. There is a low occurrence of late complications throughout childhood, although this increases with age, especially when reaching young adulthood. TAP is the most significant risk factor for RV dilatation and with the secondary need of conduit implantation, as well as for the presence of severe arrhythmias. Isolated RV outflow tract aneurysm is an important finding that has to be taken into account as it can lead to significant underestimation of RV function measured by MRI.