

Mortality and major adverse event related factors in Fallot Tetralogy

Ergün S. (1), Genc S. B. (1), Yıldız O. (1), Günes M. (1), Kafalı C. (2), Haydin S. (1)
 Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Center Department of Pediatric
 Cardiovascular Surgery Istanbul, Turkey (1); Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery
 Center Department of Pediatric Cardiology Istanbul, Turkey (2)

Introduction: In this study, we aimed to determine the risk factors associated with mortality, long hospitalization and complicated postoperative period in patients who underwent Fallot tetralogy (TOF) complete correction.

Methods: A total of 170 consecutive patients, who were operated between January 2014 and June 2018 were retrospectively reviewed. TOF-Pulmonary valve absence and TOF-Pulmonary atresia (PA) were not included in the study. Surgical results and complications were determined according to international standards. Significant residual lesion necessitating reoperation, permanent pacemaker placement due to complete atrioventricular block (AVB), acute renal failure, need for ECMO support, neurological event and death were defined as major adverse events (MAE). Prolonged intensive care unit (ICU) stay was defined as more than 3 days and prolonged hospital stay was defined as more than 7 days.

Results: The mean age was 12 (1-192) months. Palliative procedures were performed in 26(15.2%) patients and primary repair was performed in the remaining 144(84.8%) patients. 115(67.6%) patients had transannular patch (TAP) and 35(20.5%) of these had additional anterior leaflet augmentation, 41 (24.3%) patients had ventriculotomy with non TAP repair, 10(5.9%) had transpulmonary + transatrial repair and 4(2.4%) patients had RV-PA conduit replacement. The mean postoperative RV / LV pressure ratio was 0.5(0.2-0.7). AVB was seen in 5(3.0%), neurological events seen in 3(1.8%) patients. ECMO support was needed in 7 patients (4.1%). The overall in-hospital mortality was 3.5%. Small annulus z score ($p=0.01$), significant VSD after operation (residual or additional VSD) were risk factor for mortality ($p=0.03$) and MAE ($p=0.02$). High preoperative hematocrit level prolonged hospital stay ($p=0.001$) (Table 1).

Conclusions: Elevated preoperative hematocrit level due to desaturation, as a sign of longer preoperative period, is related to prolonged hospital stay and higher cost. We observed that residual or additional VSDs after TOF total repair were associated with mortality and major adverse events. Residual or additional VSDs should be closed surgically or percutaneously if possible.

Table 1: Predictors for Mortality, Major Advers Events, Length of Hospital Stay

	Predictor	OR	95% CI lower	95 % CI upper	P value
Mortality	Annulus z score	0.5	0.3	0.9	0.01
	Residual or additional VSD (2-4 mm)	54.6	1.6	1874.2	0.03
Majos Advers Events	Residual or additional VSD (2-4mm)	12.4	1.5	99.9	0.02
Length of Hospital Stay	Preoperative Hematocrit	1.12	1.1	1.2	<0.001