

Post-processing and image interpretation were performed on a GE ADW advanced workstation by an experienced cardiac radiologist. Pulmonary arteries were categorized as normal, stenotic (focal narrowing), hypoplastic (diameter <80% of the aorta), atretic (absent lumen), or enlarged (diameter greater than the aorta). The main pulmonary artery (MPA) was measured just proximal to its bifurcation; the right and left pulmonary arteries were measured in proximal part. The pulmonary annulus was measured at the level of cusp insertion in the short-axis view.

To reduce interpretation bias, TEE findings were not revealed to the radiologist prior to CTA assessment.

Statistical analysis

The collected data were reviewed for discrepancies, coded, and entered into IBM SPSS Statistics software version 26.0 (IBM, Chicago) for analysis. Quantitative variables were expressed as mean $\pm$ standard deviation, while qualitative variables were presented as frequencies and percentages. The correlation between TTE and CTA measurements was evaluated using Pearson's correlation coefficient. Agreement between the two modalities was further assessed through Bland-Altman analysis by calculating the bias (mean difference) and the 95% limits of agreement (± 1.96 standard deviations of the difference). A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 68 patients aged .5 years with a diagnosed case of TOF were included in this study. Most of the patients were presented with cyanosis.

Among 68 cases, 52(76.47%) cases were diagnosed as simple TOF & 12 as Pulmonary artery (PA) atresia in both TTE & CTA. 1 case was diagnosed as PA atresia in TTE & simple TOF in CTA. 4 cases were diagnosed as Double Outlet Right Ventricle. Tetralogy of Fallot (DORV-TOF) in TTE among them, 2 PA atresia, 1 DORV-TOF, 1 Transposition of the Great Arteries- Tetralogy of Fallot (TGA-TOF) was seen in CTA (Table-1).

Table 1. Subtypes of cyanotic congenital heart diseases (n=68)

Type	Frequency	Percentage (%)
Simple TOF	52	76.47
TOF* with PA atresia	14	20.58
TGA -TOF**	1	1.47
DORV –TOF***	1	1.47

* Tetralogy of Fallot, ** Transposition of the Great Arteries, *** Double Outlet Right Ventricle

The mean diameters of the MPA, LPA, and RPA on echocardiography were 7.84 ± 3.34 mm, 6.21 ± 2.35 mm, and 6.26 ± 2.26 mm, respectively. On CTA, the corresponding mean diameters were 7.25 ± 4.49 mm, 6.88 ± 3.52 mm, and 7.21 ± 3.22 mm. The pulmonary valve annulus measured 5.79 ± 3.73 mm on echocardiography compared with 7.39 ± 4.39 mm on CTA (Table 2).

Table 2: TTE and CTA measurements of Pulmonary annulus, MPA, RPA, and LPA

Vessels	Echo diameter (mean $\pm$ SD)	CTA diameter (mean $\pm$ SD)
MPA	7.84 ± 3.34	7.25 ± 4.49
LPA	6.21 ± 2.35	6.88 ± 3.52
RPA	6.26 ± 2.26	7.21 ± 3.22
Pulmonary valve annulus	5.79 ± 3.73	7.39 ± 4.39

In terms of pulmonary arteries (MPA 68, LPA 68, RPA 68, total n 204) morphology, the most common finding was normal, seen in 92 patients (45.1%) on TTE and 93 patients (45.6%) on CTA. Stenosis was observed in 35 patients (17.2%) on TTE and 34 patients (16.7%) on CTA, while hypoplasia was reported in 60 patients (29.4%) on TTE compared with 49 patients (24.0%) on CTA. CTA detected more atretic vessels (21 patients; 10.3%) than echocardiography (5 patients; 2.5%). TTE was unable to visualize the pulmonary arteries in 11 patients (5.4%), whereas CTA successfully visualized all (Table 3).