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**“Role of 128 slice MDCT angiography in evaluation of pulmonary artery anatomy in pediatrics age group with congenital heart disease and comparison with 2D echo findings”**

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## ABSTRACT

**AIMS AND OBJECTIVE:** -The main aim and objective of the study is to evaluate pulmonary artery anatomy using 128 slice MDCT angiography in pediatrics age group with congenital heart disease and to correlate with the findings on 2D Echocardiography.

**TYPE OF STUDY:** -Cross-sectional study

**MATERIALS AND METHODS:** - Study is done using 128 slice MDCT scanner (Somatom definition AS) manufactured by Siemens.

This one year cross-sectional study was conducted in the Department of Radiodiagnosis, SDM College of Medical Sciences and Hospital, Dharwad from January 2016 to December 2016. A total of 30 patients referred to Dept. of Radiodiagnosis with suspicion of or clinically/Echocardiographically diagnosed cyanotic and acyanotic congenital heart disease, for further evaluation by CT pulmonary angiography (CTPA) were included in the study and findings were collected. Relevant findings of echocardiography and surgery (in patients who underwent surgery) were also collected. The data was statistically analysed.

**RESULTS:** -MPA (Main pulmonary artery) was visualized in 28 (93%) patients by CTPA and 22(73%) patients by ECHO. LPA (Left pulmonary artery) was visualized in 27(90%) patients by CTPA and 18(60%) patients by ECHO. RPA was visualized in 29(96%) patients by CTPA and 23(76%) patients by ECHO. The confluence of RPA and LPA was visualized in 23(76%) patients by CTPA and 18(60%) patients by ECHO. The pulmonary artery stenosis was visualized in 20(68%) patients by CTPA and 12(40%) patients by ECHO. The PDA (Patent ductus arteriosus) was visualized in 12(40%) patients by CTPA and 8(28%) patients by ECHO. CTPA detected more main, right & left branch pulmonary arteries, pulmonary confluences, more cases of pulmonary artery stenosis and PDA. CTPA was also able to detect MAPCAs in 4 patients included in the study which were not detected by ECHO. The statistical analysis revealed significant p value for these parameters [ $p < 0.05$ ]. The findings of both the imaging modalities were also compared with the surgical findings in patients who underwent surgery (9 patients). In the patients who underwent surgery the findings of CTPA were found to correspond to the surgical findings. Among the patients who underwent surgery, ECHO was unable to visualize MPA and LPA in 2 patients, RPA and confluence in 1 patient, stenosis in 2 patients and PDA in 1 patient. The discrepancy between CTPA and ECHO may result from limited acoustic window and significant patient non compliance in many cases, which affect diagnostic performance of ECHO.

**CONCLUSION:** - Due to importance and impact of pulmonary artery anatomy on the surgical decisions in patients with CHD and ability of CTPA to better delineate the Pulmonary artery, its branches and surgically important vascular anatomy, CTPA was concluded as a better imaging modality for evaluation of pulmonary artery anatomy in these cases.