PULMONARY ARTERY BRANCHES GROWTH AFTER DUCTUS ARTERIOSUS STENTING IN SINGLE VENTRICLE

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Background:

Ductus stenting is alternative to surgical shunt for ductus-dependent pulmonary circulation, however, in single ventricle patients the pulmonary artery growth is crucial for further Fontan completion and the presence of stent material might jail the flow to one of the pulmonary artery branches impeding its growth.

Objectives:

To evaluate pulmonary artery growth post ductus stenting in single ventricle patients to Gleen shunt stage.

Methods:

We collected all the patients with single ventricle physiology and underwent ductus stenting from 2014 to 2021 and has pre-Glenn angiogram study,

Pulmonary artery caliber measured on angiogram at the time of PDA stenting and during pre-Glenn angiogram study, Mc Goone ratio and Z score were calculated for each patient.

Pre-existing pulmonary artery branch stenosis is defined our study as the stenosed part is less than or equal to 50 % of the contralateral branch, in addition to z score less than -2 standard deviation.

Inclusion criteria: all patients we single ventricle who underwent PDA stenting. Exclusion criteria:

PDA stenting beyond 3 months of age.

Results:

We have included a total of about 50 patients with single ventricle who underwent PDA stenting as primary palliation, 30 patients (60 %) have pre-existing pulmonary artery branch stenosis, 80 % left and 20 %.

17 patients (34%) required reintervention before going for Glenn shunt surgery either due to PA branch restricted growth/ increased cyanosis, 2 patients of them required 2 intervention one Blalock Taussig shunt and another PDA re-stenting.

Re-intervention as PDA re-stenting/balloon dilatation occurs in 14 patients (82%) and 3 patients (17.6%) as Blalock Taussig shunt.

Of total cases 48 patients underwent Glenn shunt surgery and 2 patients have total block of LPA underwent redo BT shunt still awaiting PA growth.

Almost all patients (96 %) reach to Glenn stage with satisfactory PA size, despite the need for reintervention.

Conclusion:

PDA stent is an attractive alternative to surgical shunts that showed good PA branch growth despite the high rate of re-intervention.