

Congenital Heart Disease

Unwell neonate with suspicion of Congenital Heart Disease (Cyanotic or Not)
START PGE 0.1 mcg/kg/min

"Pink" Right ← Left (Oxygenated)

"Blue" Right → Left (Deoxygenated)

"Critical Left Side Obstruction"

Normal Pulmonary Blood Flow

Increased Pulmonary Blood Flow

Increased Pulmonary Blood Flow

Cyanotic
(No change in PO₂ on 100% O₂)

Decreased Pulmonary Blood Flow

Y PGE

Y PGE

Y PGE

Valvar Lesions

- Types:
- Stenotic
 - Regurgitant
 - AV Canal Defect*
 - AVSD*

*can behave like large VSD

Coarctation

Weak Femoral Pulses, Brachio-femoral delay, upper limb hypertension systolic ejection murmur loudest at back
Balloon Dilation or Stent

Shunt Lesions

- 1) Single outflow tract
 - 2) valve defect
 - 3) VSD
- Surgery (closure VSD, placement of RV-PA conduit)**

Atrial Level ASD

Wide Fixed Split S2
Possible Murmur (Flow over the P and T valves)

Secundum ASD

Defect at level of the **fossa ovalis** (secondary to deficiency, perforation or absence of septum primum)

Sinus Venosus ASD

Involves portion of the **septum adjacent to entry of the systemic veins**, outside of fossa ovalis, often with anomalous pulmonary veins

VSD

Harsh, pansystolic, flat-topped
LA and LV Dil
CHF signs in infants
Drugs, Surgical Patch
Main Treatment

Primum ASD

Endocardial cushion defect involving inferior portion of the atrial septum adjacent to AV valves (often with malformations of AV valves)

X PGE

Y PGE

X PGE

Y PGE

Y PGE

Y PGE

Truncus Arteriosus

- 1) Single outflow tract
 - 2) valve defect
 - 3) VSD
- Surgery (closure VSD, placement of RV-PA conduit)**

Patent Ductus Arteriosus (PDA)

Machinery Murmur
Left Sided Volume Overload

Close via Intervention Catheter

Transposition of the Great Arteries

Can have PDA and PFO

Circulation in Parallel, Associated with ASD and VSD
Balloon Arterial Septostomy (BAS)

Surgery (Switch Great vessels, movement coronary arteries via button, patch neo-pul artery closure ASD, Ligation PDA)

Total Anomalous Pulmonary Venus Return (TAPVR)

Pul. Veins communicate with systemic veins. Pul. Veins Fail to Connect to Left Atrium.

Combined systemic and pulmonary venous return to RA.

RA and RV Dil
Surgery (re-route/baffling of pul. arteries to LA)

Tetralogy of Fallot/Pulmonary Atresia

DD Pulmonic (Pulmonary Atresia)

- 1) Over riding aorta
- 2) Pulmonary stenosis
- 3) RVH
- 4) VSD

Surgery (Blalock-Taussing Shunt)

Tricuspid Atresia

- 1) Tricuspid Atresia
- 2) Hypoplastic RV
- 3) VSD
- 4) ASD
- 5) +/- Pulmonary Stenosis

Critical Pulmonary Stenosis

Balloon valvuloplasty or surgery

Can go into SHOCK

Weak pulses, low BP, variable murmur, cyanotic

Surgery

Critical Aortic Stenosis

Can go into SHOCK

- 1) Mitral Atresia
- 2) Aortic Atresia
- 3) Hypoplastic Ascending Aorta
- 3) Hypoplastic LV

Norwood Procedure, Heart Transplant

Hypoplastic Left Heart Syndrome

DD Systemic

- 1) Mitral Atresia
- 2) Aortic Atresia
- 3) Hypoplastic Ascending Aorta
- 3) Hypoplastic LV

Norwood Procedure, Heart Transplant

Ductal Dependent Circulation

Prostaglandin E1 (PGE1) Sensitive
 Prostaglandin E1 (PGE1) Non-Sensitive
 Treatment/Intervention