

The Child with Heart Failure and Respiratory Distress

- In older children, it is usually myocarditis or cardiomyopathy
 - That sort of thing tends to present with a marked tachycardia
- In infants it is usually due to structural heart disease
 - Falling pulmonary vascular resistance allows increased pulmonary blood flow
 - This causes an increasing left-to-right shunt in kids with a VSD, persistent PDA or truncus arteriosus
 - Thus, there is increased pulmonary congestion and heart failure
 - These kids tend to present with poor feeding, lethargy, sweating and breathlessness

Duct – dependent heart disease

- This is a rare thing indeed
- “duct-dependent” because the duct is the only reason there is any flow in the pulmonary or systemic circulation
- The PULMONARY OBSTRUCTIVE LESIONS are:
 - Pulmonary atresia, Pulmonary valve stenosis
 - tricuspid atresia or severe tetralogy of Fallot
 - sometimes, transposition of the great vessels
- THE PROBLEM:
 - There is NO WAY for blood to go from the right ventricle into the pulmonary circulation
 - Thus, the lungs depend on flow via the patent ductus, from the aorta.
 - Occasionally, there is so much aortic coarctation, that the systemic blood flow depends on the patent ductus
- THE TYPICAL PRESENTATION
 - These babies tend to present in the first week of life with cyanosis, and with cardiogenic shock
 - There is usually an enlarged liver
 - If the systemic circulation depends on the patent ductus, the child ceases to feed, and collapses.
- HOW DO YOU KNOW ITS NOT BRONCHIOLITIS?

Heart is enlarged, liver is enlarged, there is no cough or coryza.

Emergency management of the child with heart failure

- ABCs come first
- Treat the cardiogenic shock
- Give them oxygen via non rebreather mask
- IF OXYGEN IMPROVES THEIR SATURATION, it's a left to right shunt
 - Eg. VSD, ASD, truncus arteriosus
 - Give them diuretics and high flow oxygen
- IF OXYGEN DOES NOTHING FOR THEM, its probably duct-dependent.
 - Give alprostadil – it increases the diameter of the duct temporarily
 - Alprostadil can cause apnoea, so intubate the child
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