## Neonatal Collapse

### 1. Initial evaluation & resuscitation
- Tachycardia/ poor pulses/ obtunded/ low BP = SHOCK
- High flow oxygen
- Intravenous access: use intraosseous (IO) if difficult
  - Push 20 ml/kg 0.9% sodium chloride (caution if signs of heart failure) (If no signs of heart failure and still signs of shock-rept fluid bolus)
- Antibiotics: cefotaxime 50mg/kg IV

### 2. Immediate investigations
- General supportive measures will improve outcome
- Sepsis and cardiac disease commonest cause (both present as shock)
- Non specific presentation: hypothermia, respiratory distress, poor pulses
- If ADR or NorADR >0.5 mcg/kg/min or possible Addisonian crisis
- Noradrenaline if vasodilated-bounding pulse/wide pulse pressure
- Adrenaline (ADR) if poor pulses, cold, low cardiac output

### 3. Fluid refractory shock = hypotension despite 40 ml/kg fluid
- Continue fluid boluses if response (HR improves and liver not tense)
- Start peripheral dopamine at 10 mcg/kg/min
- Intubate and ventilate
- Central IV access or IO.
- Reassess heart rate pulses and blood pressure

### 4. Dopamine resistant shock (use 2nd line inotrope)
- Adrenaline (ADR) if poor pulses, cold, low cardiac output
- Noradrenaline if vasodilated-bounding pulse/wide pulse pressure
- If ADR or NorADR >0.5 mcg/kg/min or possible Addisonian crisis (low glucose, ↓ Na+, ↑ K+), consider hydrocortisone 2 mg/kg IV

### Duct Dependant Congenital Heart Disease
- Cyanosis not responding to oxygen
- Poor or absent femoral pulses
- Heart murmurs present, or cardiomegaly

### Measure pre and post ductal saturations, 4 limb BP

### DO NOT DELAY TRANSFER
- Intubate and ventilate if
  1. Preductal satur < 70%
  2. Grunting / acidosis / poor pulses / apnoea
  3. Transferring on prostin > 15 ng/kg/min

### Assessment of Heart Failure
- Signs: gallop, cardiomegaly, hepatomegaly
- Potential diagnosis CHD, cardiomyopathy, myocarditis
- Cautious fluid resuscitation- stop if increasing liver size

### Sepsis
- Group B strep, E Coli
- MRSA
- Coarctation aorta
- Hypoplastic Left heart
- Transposition (TGA)
- TAPVD (obstructed)
- SVT
- Myocarditis
- Urea cycle defect
- Organic acidosis
- Mitochondrial
- Intracranial bleed
- Intrabdominal bleed

### Cardiac
- PROM, maternal GBS, fever in labour
- ↑ GCS, coagulopathy, ↑ ALT, family cold sores
- Unresponsive 1st line antibiotics, + contact
- Systolic arm-leg gradient > 20 mmHg
- Poor pulses - may be pink= pulm. overcirculation
- Precordial sats < post ductal sats
- Shocked & cyanosed/CXR plethoric
- HR >220 despite fluid, fixed HR, narrow QRS
- Cardiac failure, tachycardia, small QRS
- ↑ GCS, Seizures, ↑ ammonia, alkalosis
- Profound metabolic acidosis, ketone negative
- ↑ Lactate, seizures, cardiomyopathy
- Focal neuro signs, fontanelli ↑, retinal bleeds
- Unexplained anaemia, abdominal bruising

### Metabolic
- Cefotaxime 50mg/kg IV (add amoxicillin 100mg/kg IV if listeria concerns (rare))
- Add Acyclovir 20 mg/kg IV. High index suspicion, history may be absent
- Add Vancomycin 15mg/kg IV
- Urgent prostin (may need high dose) and support (ventilation/inotropes)
- Prostin. Avoid oxygen-can cause pulm. overcirculation. Target sats 75%
- Prostin may make worse. Need echo confirmation and surgery
- See arrhythmia guideline. Adenosine, if shocked: ventilate + DC shock
- Supportive (ventilation, inotropes). Immunoglobulin may be beneficial
- Ammonia >150mmol/L. Repeat to confirm. Metabolic opinion
- Supportive (inotropes, ventilation). May co-present with sepsis
- Supportive (inotropes, ventilation). May co-present with sepsis
- Head CT to exclude neurological problem? NAI, ?haemorrhagic disease
- Abdominal and head CT, ?NAI, ?haemorrhagic disease of newborn

### Trauma

### Ref:
1. Penny DJ  *ADC* 2001; 84:F141-145,
2. Carmo KA *ADC* 2007; 92:F117-119
3. Dixon J  *ADC* 2005; 90:1190-95
4. Dellinger RP  *CCM* 2013; 41:580-637