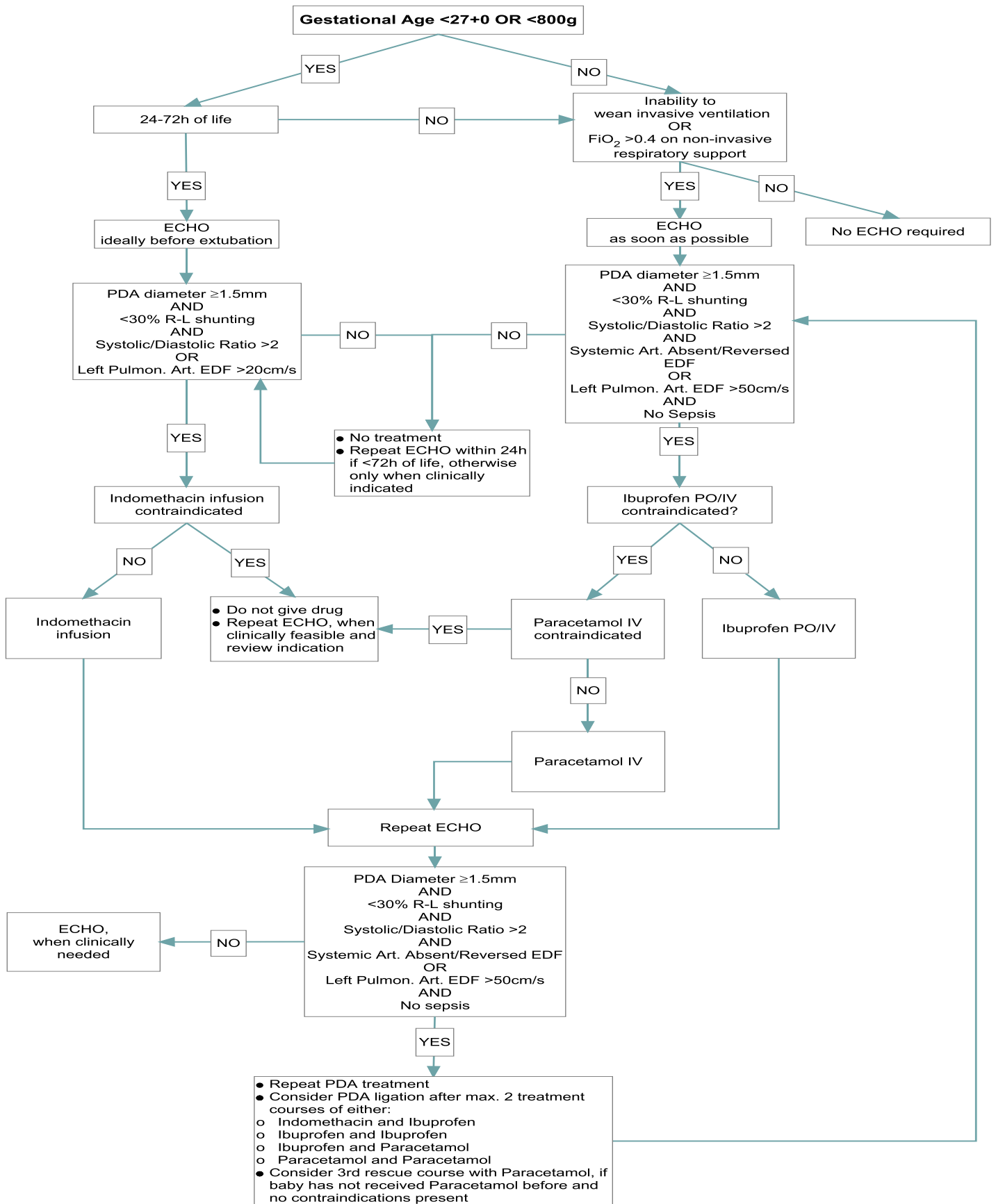


MANAGEMENT OF PATENT DUCTUS ARTERIOSUS



Ibuprofen and indomethacin contraindications: Active bleeding, thrombocytopenia <100,000/microliter and/or coagulopathy, suspected NEC, impaired renal function (urine output <1ml/kg/h or serum creatinine >100mcmol/l) and duct dependent congenital heart disease

Paracetamol contraindication: Liver dysfunction

Criteria for PDA ligation (both clinical and ECHO criteria must apply)

Clinical criteria

- No sepsis, lung parenchymal abnormalities and congenital heart defects
AND
- Inability to wean invasive or non-invasive ventilation
AND
- Inability to wean oxygen (persistent O₂ requirement >40%)
AND/OR
- Persistent hypotension not attributable to sepsis/CHD
AND

ECHO criteria (see chart below)

- PDA diameter ≥1.5mm with an unrestrictive flow pattern
AND
- Pulmonary hyperperfusion - at least 1 criteria in large shunt category
AND/OR
- Systemic hypoperfusion (“ductal steal”) - reversed EDF in at least 1 of the following: ACA, SMA, Coeliac artery or descending aorta

Echocardiographic indicators for assessment for PDA ligation

| Indices of shunt volume | Small | Moderate | Large |
|---|------------------|-----------------|-------------------|
| PDA characteristics | | | |
| 1. Absolute diameter (mm) | < 1.5 | 1.5 – 2.0 | ≥ 2.0 |
| 2. PDA:LPA diameter ratio | < 0.5 | 0.5 – 1.0 | ≥ 1.0 |
| 3. PDA diameter indexed to body weight (mm/kg) | -- | -- | ≥ 1.4 |
| 4. PDA peak systolic velocity (m/s) | ≥ 2.0 | 1.5 – 2.0 | < 1.5 |
| 5. PDA systolic: diastolic ratio | < 2.0 | 2.0 – 4.0 | > 4.0 |
| Pulmonary hyperperfusion | | | |
| 1. LPA end-diastolic blood Flow velocity (cm/s) | < 20 | 20 - 50 | > 50 |
| 2. LA : Ao ratio | < 1.5 | 1.5 – 2.0 | > 2.0 |
| 3. LVEDD (z score) | -- | -- | -- |
| 4. LVO flow (ml/kg/min) | < 200 | 200 - 300 | > 300 |
| 5. Mitral E:A ratio | < 1 | 1 | > 1 |
| 6. Pulmonary vein diastolic (D) wave velocity (cm/s) | < 0.3 | 0.3 - 0.5 | > 0.5 |
| 7. Mean LPA flow velocity (m/sec) | - | - | > 0.42 |
| Systemic hypoperfusion | | | |
| Diastolic blood flow pattern in systemic arteries (SMA, CT, MCA, PCA, Desc Ao & RA) | Antegrade | Absent | Retrograde |