

PATENT DUCTUS ARTERIOSUS IN PRETERM INFANTS

Introduction

Gestational age is the most important determinant of the incidence of patent ductus arteriosus (PDA). The other risk factors for PDA are lack of antenatal steroids, respiratory distress syndrome (RDS) and need for ventilation.

Clinical Features

- wide pulse pressure/ bounding pulses
- systolic or continuous murmur
- tachycardia
- lifting of xiphisternum with heart beat
- hyperactive precordium
- apnoea
- increase in ventilatory requirements

Complications

- congestive cardiac failure
- renal impairment
- intraventricular haemorrhage (IVH)
 - risk of subsequent neurological impairment, disability
- pulmonary haemorrhage
- necrotizing enterocolitis
- chronic lung disease

Management

- confirm PDA with cardiac ECHO if available
- medical therapy
 - fluid restriction. Care with fluid balance to avoid dehydration
 - no role for diuretics
 - IV or oral Indomethacin 0.1 mg/kg/day daily dose for 6 days -contraindicated if
 - infants with proven or suspected infection that is untreated.
 - bleeding, especially active gastrointestinal or intracranial.
 - platelet count $< 60 \times 10^9/L$
 - NEC or suspected NEC
 - duct dependant congenital heart disease
 - impaired renal function creatinine > 140 micromol/L or blood urea >14 mmol/L
 - monitor urine output and renal function. If urine output < 0.6 ml/kg/hr after a dose given, withhold next dose until output back to normal.
 - monitor for GIT complications e.g. gastric bleeding, perforation
- surgical ligation
 - persistence of a symptomatic PDA and failed 2 courses of Indomethacin
 - if medical treatment fails or contraindicated
- in older preterm infant who is asymptomatic,
 - i.e. only cardiac murmur present in an otherwise well baby – no treatment required.
 - follow-up as necessary. Most PDAs in this group will close spontaneously

Pearls and pitfalls in management

- higher success rate in PDA closure if indomethacin is given in the first 2 weeks of life
- oral indomethacin: ensure suspension is freshly prepared, well mixed before serving
- IV indomethacin is unstable once the vial is opened