

NEONATAL RESUSCITATION

DAVID WOODS

Neonatal Medicine

School of Child and Adolescent Health

University of Cape Town

DEFINITIONS

- **What is neonatal asphyxia?**

Failure to establish adequate respiration after birth (cardiorespiratory depression)

- **What is fetal (intrapartum) hypoxia or fetal asphyxia?**

Inadequate tissue oxygenation in the fetus (during labour)

- **The term birth asphyxia is best not used!**

FETAL HYPOXIA vs NEONATAL ASPHYXIA

- Many infants with documented fetal hypoxia breathe well at birth and do not need resuscitation.
- Most infant who need resuscitation at birth have no evidence of fetal hypoxia.
- Acute peripartum events include both fetal hypoxia and neonatal asphyxia
- Lancet 1982; i: 494-496

NEONATAL ASPHYXIA

- Failure to breath adequately
- Low 1 minute Apgar score (<7)
- No or poor cry
- Need for resuscitation
- Response to resuscitation efforts
- Role of 5 minute Apgar score
- Value and limitations of Apgar scoring

- V Apgar Arch Dis Child 1962; 104: 133

CAUSES OF NEONATAL ASPHYXIA

- Fetal hypoxia
- Maternal sedation/analgesia/anaesthetic
- Difficult delivery
- Preterm infant
- Severe respiratory distress
- Obstructed airway
- Excessive suctioning

FEATURES OF FETAL HYPOXIA

- Fetal distress
- Metabolic acidosis at birth (BD 12+)
- Neonatal asphyxia (poor breathing)
- Neonatal encephalopathy
- Multi-organ hypoxic damage in the infant
- J Low Am J Obstst Gynecol 1997; 176: 957-959

EQUIPMENT FOR RESUSCITATION

- Warmth, good light, clock
- Firm, flat surface
- Dry towels
- Suction
- Bag and mask
- Laryngoscope with endotracheal tubes
- Adrenaline, Narcan, Sodium bicarbonate and Saline
- Syringes, needles, IV fluid set

NORMAL CARE AFTER BIRTH

- Dry the infant well
- Clamp the umbilical cord
- Brief examination
- One minute Apgar score
- To mother for kangaroo care/breast feeding
- Cord and eye care and vitamin K later
- Identification and paper work

STEPS IN RESUSCITATION

- Dry well and stimulate
- Suction and position to open airway
- Role of oxygen questionable
- Bag and mask or bag and tube ventilation
- Cardiac massage and adrenalin
- Narcan for opiates
- Volume expansion, adrenergics, sodium bicarbonate.
- JAMA 1992; 28: 2276-2261

DRUGS IN RESUSCITATION

- Adrenaline 1/10 000 - 0.25 ml/kg
- Narcan - 0.25 ml/kg
- Sodium bicarbonate 4% - 2 ml/kg slowly
- Normal saline - 10 ml/kg over 10 minutes

POST RESUSCITATION CARE

- Observation
- Look for a cause of neonatal asphyxia
- Manage any complication
- Screen for neonatal encephalopathy
- Assess for follow up

NEONATAL ENCEPHALOPATHY

- Altered level on consciousness
- Convulsions
- Altered tone
- Depressed reflexes
- Depressed respiration