

# DELIVERY ROOM MANAGEMENT AND RESUSCITATION

## Delivery Room Management

### General Considerations

- For indications for attending deliveries see Ref: Chapter Attending Deliveries and Admissions.
- Inform NICU/HDU of type of respiratory support needed for final preparation of cot space.
- Ensure parents can see baby before transfer and as soon as possible after birth - give verbal and written information to them within 2 h of admission (baby's condition, preferred feeding choice, 2 baby photographs, neonatal unit admission booklet, premature baby book) – further information to be gathered from and given to parents within 24 h after birth (update on baby's condition by consultant, neonatal blood spot screening, family and social history, visiting and telephoning guidelines, hand washing, parentcraft sheet, additional available facilities) (Ref: Visiting Guideline).

### Special Considerations

#### **Deliveries $\geq$ 35 + 0 weeks:**

- Follow standard NLS recommendations from UK Resuscitation Council.

#### **Preterm deliveries < 35 + 0 weeks:**

- All preterm infants > 22+6 weeks should be fully resuscitated unless discussed with parents and Consultant (Ref: Ethics Guideline).
- See algorithm below for acute management.
- Avoid inflation breaths with NeoPuff, no bag and mask ventilation.
- Minimise peak pressures with maintenance of PEEP using T-piece.

#### **Airway Obstruction (Meconium, Blood or Mucus):**

- See algorithm below for acute management.
- Airway obstruction due to meconium, blood or mucus can be a sign of an accompanying problem (e.g. HIE, Sepsis, TOF, APH, etc.).
- Admit baby to transitional care on postnatal ward and start regular observations if babies are well, but born with one of the following risks: Mother with pyrexia (> 38°C), abnormal CTG, emergency c/s, thick meconium, blood clot or mucus plug, need for active respiratory resuscitation, 5 min APGAR  $\leq$  6, umbilical arterial pH < 7.0, other clinical concern.
- Observations (colour, respiratory rate, heart rate and temperature) to be performed 1-hourly for 2 h, then 2-hourly for 10 h, discontinue after 12 h if pink colour (centrally), warm, well perfused, respiratory rate  $\leq$  45 bpm, normal heart rate, tone, activity and feed.
- Admit to the neonatal unit for investigations and treatment if baby persistently tachydyspnoeic (> 60 bpm) or criteria for discontinuation of observations not fulfilled and concerns remain after neonatal review.

#### **Pneumothorax/Pleural Effusion:**

- Lack of clinical improvement despite adequate airway management with diminished air entry on one side of the chest (chest asymmetry) and displaced or muffled heart sounds.
- Cold light or urgent chest x-ray if clinically stable, otherwise thoracocentesis with a 22 G cannula 3<sup>rd</sup>/4<sup>th</sup> intercostal space in anterior axillary line or a butterfly needle in 2<sup>nd</sup> intercostal space midclavicular line, removing air using a 3-way tap (Ref: Procedures - Pneumothorax).

#### **Diaphragmatic Hernia:**

- If not antenatally diagnosed suspect CDH if lack of clinical improvement despite adequate respiratory management with decreased air entry on one side, displaced heart sounds, gurgling sounds on one side of the chest and scaphoid abdomen.
- Obtain urgent chest x-ray.
- Intubate immediately (if possible) and place nasogastric tube on free drainage.

#### **Abdominal wall defects:**

- Place baby into plastic bag, make sure exposed abdominal organs are not traumatised or kinked leading to bleeding or ischaemia by using additional cling film to hold organs in midline (will also keep organs moist and prevent dehydration).
- Place nasogastric tube on free drainage.

**Shock:**

- Consider hypovolaemic shock for instance in babies born due to severe antepartum haemorrhage, placental abruption, with extreme paleness, hydrops or in twins of different size.
- Can be pale at birth and have lack of improvement in saturations despite adequate airway management.
- Insert emergency UVC and give volume expansion as NaCl 0.9% or O-negative emergency blood 10 - 20 ml/kg over 10-20 min i.v., repeat up to total of 60 ml/kg.

**Unresponsive patient without obvious cardiorespiratory problems:**

- Consider maternal sedation as cause of respiratory depression if mother received narcotic analgesic within 4 h of delivery.
- Give Naloxone at 10 mcg/kg/dose i.v. every 2 min if needed or 200 mcg i.m. once.
- Give Dextrose 10 % 2.5 ml/kg/dose over 2 minutes followed by a Dextrose 10 % infusion 90 ml/kg/d **only if** capillary blood glucose < 1.5 mmol/l.

**BABY < 35+0 WEEKS**

- Request delay of cord-clamping **OR**
- 4x milking of cord

- **GA ≥ 26+0 wks AND**
- **EFW ≥ 900 g**

- **GA < 26+0 wks AND**
- **EFW < 900 g**

**PRIMARY CPAP**

- Place in polythene bag (if < 30+0 wks)
- Mask CPAP via NeoPuff® (8 cm H<sub>2</sub>O, FiO<sub>2</sub> 0.3)
- Attach saturation monitor
- Assess breathing & heart rate
- Consider **primary intubation** if antenatal steroids not given, PROM, chorioamnionitis **OR other clinical concerns like need for transfer**

**PRIMARY INTUBATION**

- Place in polythene bag
- Intubate and check tube position (clinically + by chart)
- Attach saturation monitor
- Minimal ventilation via NeoPuff® observing HR
- Curosurf® 100 - 200 mg/kg (aim for < 20 min from intubation)
- Consider **primary CPAP** if antenatal steroids given, no PROM or chorioamnionitis
- See Stabilisation Care Pathway

- YES ←
- Breathing adequate?
  - Heart rate > 100 bpm?

NO

- Minimal ventilation via mask NeoPuff®
- Confirm response by checking heart rate and oxygen saturations
- **Aim: By 5 min - HR increasing > 100 bpm + SaO<sub>2</sub> > 80 %**

- Breathing adequate?
- Heart rate > 100 bpm?

NO

- Intubate and check tube position (clinically + by chart)
- Attach saturation monitor
- Minimal ventilation via NeoPuff observing HR
- If HR not increasing, start cardiac support
- Curosurf® 100 - 200 mg/kg (aim for < 20 min from intubation)
- See Stabilisation Care Pathway

YES

- Restart mask CPAP
- Transfer to NICU/SCBU
- If no 24 h NCPAP support available then inform regional level III neonatal unit for advice and possible transfer

**1<sup>ST</sup> HOUR OF LIFE**

- Optimise CPAP care – See CPAP Guideline
- Minimal handling – Temperature 36.1 – 36.5, peripheral line, Dextrose 10% infusion, Caffeine i.v., no arterial line or central line attempts
- **Aim: SaO<sub>2</sub> > 84 % < 93 % in FiO<sub>2</sub> < 0.4, pCO<sub>2</sub> < 8.5 kPa or pH > 7.2, no severe or frequent apnoeas**

- Aims achieved?

NO

- Intubate and check tube position (clinically + by chart)
- Mechanical ventilation
- Curosurf® 200 mg/kg after chest x-ray review
- Inform regional level III neonatal unit for advice and possible transfer

YES

**Ref: CPAP Guideline**