Neonatal Resuscitation Updates

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PEARLS

- In a child born with good tone and respirations, the correct action is to hand the child to the mother.
- In a child with poor tone and respiratory effort, step one is to warm the child and suction using a bulb suction, this will be effective most of the time.
- If the child does not get good tone or respiration, with a heart rate of 60-100, start bag valve mask respiration or place an LMA and provide respirations at 40-60 breaths per minute.
- If the heart rate is < 60 after 30 seconds of the above, intubate, start CPR and consider IV epinephrine at a dose of: 0.03 mg-0.005 mg/kg, consider IV fluids, blood, and the possibility of a pneumothorax.

- **Cord Clamping:** Delay cord clamping for 30-60 seconds to allow transfusion from placenta to baby, unless the baby needs immediate resuscitation
- **Check heart rate:** Auscultation and cord pulse are limited in reproducibility, get sick child on a monitor as soon as possible
- **Compressions:** Compressions are provided at 90 compressions/minute and ventilation is provided in a ratio of 3 compressions:1 breath. So that is 120 events per minute: 90 compressions, 30 ventilations.
- **Oxygen:** Start with room air in term kids, 30% FiO_2 in late preterm kids. If doing chest compressions use 100% O_2.
- **Suction:** Do not suction as a routine, even if there is amniotic fluid staining, but if there is evidence of obstruction, use the bulb suction.
- **In intubated babies**, the cuff inflation pressure should be <30 cm H_2O or 20-25 cm H_2O if preterm, PEEP of 5 cm H_2O.
    - Delays in starting ventilation are associated with a significant increase in mortality, so start immediately in kids that are apneic, hypoxia or HR < 100.
- **Normal O_2 saturation** at 1 minute of life is 60-65%, by 10 minutes it is 85-95%
- For kids needing moderate support, CPAP works well
- **Preferred venous access is a 5 F umbilical line** inserted into the vein (the little mouth of the little face made by the umbilical arteries and vein on the cut cord). Insert the line 4-5 cm until blood returns.

PERSPECTIVES

- In neonates, intraosseous (IO) access is an option but has a higher failure rate than in older children.

- Document initial temperature - aim for 36.5 - 37.5°C
- Warming techniques:
    - Skin to skin with mom
    - Radiant warmers
    - Plastic wraps
- Hypothermia might be helpful in children with hypoxic encephalopathy.
- **Consider termination** of efforts after 20 minutes with no detectable heart rate.
- In the US, there is an executive order that places the burden on NOT discouraging ongoing resuscitation of the premature neonate and in prolonged resuscitations.

References:

Part 5: Neonatal Resuscitation: 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020;142:S524–S550. https://doi.org/10.1161/CIR.0000000000000902

Link:
CorePendium: Neonatal Resuscitation