

Neonatal Resuscitation



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Core Knowledge and Skills



- **A**irways- Establish Clear Airway
- **B**reathing- Ventilation & Oxygenation
- **C**irculation- Adequate Cardiac Output
- Reduce Heat Loss

Phases of Resuscitation



- Preperation
- Resuscitation
- Postresuscitaion

Preparation

- Advance
- Immediate

Neutral Thermal Environmental



- Overhead Warmer
- Heat Lamps
- Incubator
- Warm Towels & Blankets
- Warm Water Filled Gloves

Resuscitation Equipment



- Organized
- Readily Accessible
- Easy to Assemble

Universal Precautions



- Gloves
- Goggles
- Gown

Neonatal Drug Preparations



- Precalculated Drugs
 - Sodium Bicarbonate 0.5 mEq/L
 - Epinephrine 1:10000
- Broselow Tape

Resuscitation Assignments



- Team Leader- Airway
- Second Rescuer-
 - Pulse Check
 - Chest Compression
- Third Rescuer-
 - Medications
 - Equipment

Antepartum Risk Factors

- Maternal Age >35 Yrs. Or <16 Yrs.
- Maternal Diabetes
- Maternal Hemorrhage
- Drug Therapy
- Substance Abuse
- Previous NN Death
- Lack of Prenatal Care
- Maternal Hypertension

Antepartum Risk Factors



- Anemia or Isoimmunization
- Maternal Illness
- Multiple Fetuses
- SGA
- Preterm/Postterm Fetus
- Premature ROM

Intrapartum Risk Factors



- Abnormal Presentation
- Infection
- Prolonged Labor
- Prolonged ROM
- Prolapsed Cord
- Maternal Sedation
- Meconium Stained Amniotic Fluid

Intrapartum Risk Factors



- Abnormal Fetal Heart Rate
- Foul Smelling Amniotic Fluid
- Precipitous Delivery
- Profuse Bleeding

Resuscitation-Oriented History



- Multiple Pregnancy
- Meconium Stained Amniotic Fluid
- Prematurity
- Narcotics Use in Previous 4 Hours

Resuscitation Priorities

Drying, Warming, Positioning,
Suctioning, Stimulation

BVM Vent

Oxygen

Chest

Compressions

Intubation

Medica
tions

Resuscitation Priorities



- Oxygen
 - Indications: Dusky, Poor Tone, Breathing Spont.
- Route
 - Blow By or Mask if Breathing Spontaneously

Bag-Valve-Mask Ventilation



Indications:

- Apnea or Gaspings Respiration
- Heart Rate <100 bpm
- Persistent Cyanosis Despite O₂ Therapy

Bag-Valve-Mask Ventilation Technique



- Neutral Position of Head
- Tight Mask Seal
- Avoid Pressure on Trachea

Ventilation of the Newborn



Assisted rate= 40 to 60 bpm

Signs of Adequate Ventilation:

- Bilateral Chest Expansion
- Bilateral Breath Sounds
- Adequate Heart Rate & Color

Indications for Intubation

- BVM Ventilation Not Effective
- Thick Meconium
- Prolonged Postive Press. Vent.

Chest Compression



Indications:

Despite Adequate Stimulation & Effective Ventilation With 100% O₂

- Heart Rate <60 bpm

OR

- Heart Rate 60 to 80 but not Increasing

Chest Compressions



- Rate: 90 per minute, Interposed by Vent.
- Compression - Ventilation Ratio: 3:1
- Stop Compressions When HR >80 bpm

Chest Compressions



Methods:

- Two Finger Chest Compressions
 - Two Fingers are Placed Just Below the Nipple Line
- Hands-Around-the-Chest Compressions
 - Two Hands Encircling the Chest
 - Two Thumbs at the Nipple Line

Medications



Epinephrine:

- Indications: HR <80 bpm Despite IPPV & Chest Compressions
- Dose: 0.01 to .03 mg/kg IV, ET, IO (0.1 to 0.3 mL/kg of 1:10000)
- If no Response to ET , may Increase ET Dose to 0.1 mg/kg of 1:1000

Mesications



Naloxone:

- Indications:
 - Respiratory Depression
 - Narcotic Administration Within 4 Hours of Delivery
- Dose: 0.1mg/kg IV, ET, IO, SQ
- Caution: May Cause Acute Withdrawal Symptoms in Infants of Chronically Addicted Mothers

Common Post-Resuscitation Airway Complications



- **D**isplaced ET Tube
- **O**bstructed ET Tube
- **P**neumothorax
- **E**quipment Failure
 - Inadequate Ventilatory Support
 - Gastric Distension

Post-Resuscitation Evaluation & Care




- Temperature Regulation
- Acid-Base Status
- Blood Glucose
- Laboratory Studies
- Chest X-Ray

Neonatal Resuscitation



- Time is Life
- Speed is Essential



Thank You !