

# NEONATAL RESUSCITATION

## DEFINITION:

Neonatal resuscitation is defined as a set of intervention at the time of birth to support the establishment of breathing and circulation.

## INDICATIONS:

- ✓ Perinatal asphyxia due to following conditions:
- ✓ Continuation of intrauterine hypoxia [placental insufficiency]
- ✓ Prenatal and intranatal medications to the mother
- ✓ Birth trauma to the neonate
- ✓ Postnatal factors eg. Pulmonary, cardiovascular and neurological abnormalities of the newborn.

## EQUIPMENTS NEEDED:

- ❖ Radiant warmer
- ❖ Inbuilt suction and intermittent positive pressure
- ❖ Pencil handle laryngoscope with infant [0 and 1] size blade with light source and battery
- ❖ Disposable ET tube with internal diameter of 2.5mm, 3.5mm, 4.0mm mounted with adapters.
- ❖ Electrical outlets

- ❖ Different size suction catheters [6fr,8fr,10fr and 12fr]
- ❖ Meconium aspiration device
- ❖ Press type rubber bulb or oral suction
- ❖ De lee mucus trap
- ❖ Oxygen cylinder
- ❖ AMBU bag and mask
- ❖ Plastic oral airway
- ❖ Syringes and needles
- ❖ 7.5% sodium bicarbonate
- ❖ Epinephrine 1:10,000
- ❖ Neonatal nalorphine [1mg/1ml]
- ❖ Nalazone hydrochloride [0.4mg/ml]
- ❖ Ampoules of distilled water
- ❖ Normal saline
- ❖ 10% dextrose
- ❖ Sterile neonatal delivery pack containing bowl, scissors, cotton swabs and umbilical cord ties
- ❖ Umbilical vessel catheterization supplies
- ❖ Warm clean bassinet
- ❖ Stop clock
- ❖ Cardiac monitor and pulse oximeter.

## **PREPARATIONS:**

- The resuscitation kit should be ready before the baby is born
- The radiant warmer should be put on and plenty of sterile prewarmed linen should be available.

## **INITIAL STEPS IN RESUSCITATION:**

- ❖ Perform hand hygiene and wear gloves
- ❖ The baby should be received in a warm sheet and head should be kept slightly low
- ❖ Place the baby under radiant warmer
- ❖ The baby should be placed supine or lying on side, with head in a neutral or slightly extended position
- ❖ The infant's mouth, oropharynx, hypopharynx, and nose are suctioned using thick 10fr suction catheter with gentle intermittent suction
- ❖ The nose should not be suctioned first as it would lead to reflex breathing with risk of aspiration of secretions contained in the oral cavity
- ❖ The baby should be dried effectively and wet linen should be removed
- ❖ If an infant is not breathing or breathing efforts are sluggish, he should be stimulated by flicking the soles or rubbing the back.
- ❖ The tactile stimulation should not be continued beyond 3-4 flicks and when it is ineffective
- ❖ The baby should be promptly ventilated with a bag and mask

- ❖ Evaluate the infant every 30 seconds by simultaneously observing respirations, heartbeat, and color to decide the need for further steps.

## **RESUSCITATION PROCEDURES:**

- Position the infant supine by placing a roll of towel under the shoulders in order to extend the neck and open the airways
- Thorough suctioning should be done
- Rightly fit the mask on the face of the baby enclosing nose and mouth of the baby
- The oxygen reservoir should be attached to the bag
- Ventilate the infant at a rate of 40-60 breaths/min. The pressure should be 15-20cm of water. In case of collapsed alveoli few initial inflation pressure of 30-40cm of water is recommended
- There should be noticeable rise and fall of the chest during each ventilation
- Monitor the heart rate q30 seconds. To save the time the heart rate can be counted for six seconds and multiply by 10 to get the heart rate per minute.
- If despite effective bag and mask ventilation, heart rate is not coming up or it further slows down and drops below 80/mt, the infant should be intubated

- The ET tube should be suctioned before starting positive pressure ventilation
- The ventilation can be stopped as soon as the baby establishes spontaneous breathing and heart rate is maintained above 100/min.