



ORIGINAL RESEARCH PAPER

Neonatology

NEONATAL RESUSCITATION GUIDELINES (NRP-AAP). ARE WE GOING BACKWARDS?

KEY WORDS:

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Approximately 10% of Newborns require some assistance to initiate and sustain effective breathing at birth [1]. Perinatal asphyxia accounts for 23% of 4 million neonatal deaths each year globally [1,2]. Skilled delivery room resuscitation can prevent many of these deaths and neurodevelopmental handicaps in survivors. The most important step in neonatal resuscitation is adequate inflation and ventilation of neonatal lungs. The initial “Golden minute” after birth is extremely important to initiate respiration. Failure to initiate and sustain adequate breathing efforts in neonate at birth is an important cause of early neonatal mortality and morbidity and subsequent poor neurodevelopmental outcomes. While considering evidence regarding neonatal resuscitation, there are gaps in the scientific knowledge. Most of human studies are observational, as a well-designed RCT will be ethically challenging in the delivery room. The aim of neonatal research is to address these gaps and to provide standardized guidelines for NRP (Neonatal Resuscitation Programme) of the American Academy of Pediatrics.

The current version of the NRP 2020 recommends the initial steps of resuscitation for 3 situations- (a) preterm, (b) apneic or gasping, (c) poor muscle tone [3,4]. All depressed newborns requiring delivery room resuscitation should receive 'initial steps' before initiating positive pressure ventilation. These essentially constitute temperature maintenance, positioning, suctioning (if needed), drying and tactile stimulation in this order (NRP 7th edition 2015)(2). Suctioning is done to clear the airway and drying is done to prevent heat loss. Neonatal Resuscitation program as per the International Liaison Committee on Resuscitation (ILCOR) guidelines, (NRP7th edition 2015) had made it clear that the initial steps should include, in order, positioning the baby under radiant warmer, then suctioning if there is a lot of secretions, and after that only drying and gentle stimulation, if needed.

Though the sequence of suctioning followed by drying has been endorsed as the part of initial steps in neonatal resuscitation program (NRP) of the American Academy of Pediatrics (AAP), NRP textbook 7th edition [2], it is based on expert opinion rather than evidence. As per the new NRP textbook 2020, the initial steps of NRP are rearranged in the order to better reflect the common practice.

PREVIOUS (7 th edition NRP)	New (8th edition NRP)
1. Provide warmth and maintain temperature	Provide warmth and maintain temperature
2. Position airway	Dry
3. Clear secretions	Stimulate
4. Dry	Position airway
5. Stimulate	Suction and clear secretions if needed

In neonatal resuscitation module of Facility-based newborn care [5] also, the sequence suggested is suctioning first, followed by drying. Contradictory recommendations have led to confusion among health professionals, with variations in practice and training. In my experience with more than 300 cases of perinatal depression spanning over 15 years, it has been my experience that suctioning the airway that too mouth first and then the nostrils is needed to make these asphyxiated babies to initiate respiration. Suctioning is not

done in all the cases. Suctioning is needed and done only if there are a lot of secretions and the baby is totally apnoeic and not in all the cases. In my experience, sick babies require suctioning first and then only drying. Initiating respiration especially if the airway is blocked, is equally as important as temperature control in these special situations and it takes 5-7 seconds only.

DISCUSSION :

The immediate care of newly born babies involves an initial assessment of gestation, breathing, and tone. Babies who are breathing well and/or crying are cared for skin-to-skin with their mothers and should not need interventions such as routine tactile stimulation or suctioning, even if the amniotic fluid is meconium stained. Avoiding unnecessary suctioning helps prevent the risk of induced bradycardia as a result of suctioning of the airway.

But in babies who are really depressed, apnoeic and not breathing, initial positioning under the radiant warmer and suctioning the mouth first and then the nose, if secretions are present will help the baby to start breathing and sustain life. If we plan for drying the baby, changing the linen and then do suctioning, precious time may be lost as seen in a study published in Indian Pediatrics. (6) In the study only 5.2% in the first group (suctioning before drying) died, while in the second group (drying before suctioning) 11.7% died. This is an eye opener that depressed sick babies require suctioning first and then only drying.

CONCLUSION:

To bring uniformity and consistency among health professionals and to avoid confusion in implementation of NRP guidelines, let us follow a scientific and common sense approach which is in agreement with the standard guidelines of NRP (7th edition). Thus in the initial steps of resuscitation of a depressed neonate (apneic/gasping/ decreased tone), let us follow the standard guidelines namely, positioning the baby under the warmer, suctioning if needed, drying and removing the wet linen, followed by gentle stimulation or evaluation for respiration and heart rate [2]. And we should remember that this suctioning is needed only in babies totally apnoeic and has lot of secretions blocking the airway and not in all cases. In such situations, suctioning should be done before drying and placing on the mother to salvage precious time and life of the baby.

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