

Unique Way of Peripheral Stimulation for Recurrent Apnea in a Preterm Neonate

Apnea of prematurity (AOP) is a common concern in premature infants. Routine clinical management of the obstructive subtype involves providing continuous positive airway pressure (CPAP) ventilation to prevent alveolar atelectasis and pharyngeal collapse, apart from prone positioning. In central apnea, methylxanthine therapy is mainstay of treatment as it stimulates the central nervous system and respiratory muscle function [1]. Peripheral tactile stimulation is the most common intervention for AOP as it helps in reducing apnea episodes. It works by generating excitatory, nonspecific neuronal activity in the brainstem to stimulate respiration [2]. Tactile stimulation has the potential to substantially reduce the frequency of apnea [3].

Devices for stimulation like oscillating mattress are not available in most of the neonatal intensive care units. We recently managed a case of recurrent apnea in a preterm infant by providing peripheral stimulation in a unique way. The baby was a 27-week-old preterm neonate who developed recurrent apnea and required mechanical ventilation for the same, apart from intravenous caffeine, red blood cell transfusion and intravenous antibiotics for infection. Ultrasonography of the cranium was normal. Baby was finally extubated but

she was still having apneic episodes, improved by tactile stimulation. We connected the end delivery limb of the ventilator tubing to a glove (*Web Video I*), and the ventilator was started with average settings. Baby's foot had contact with the air filled glove that provided repeated gentle stimulation. After providing tactile stimulation with this technique, the frequency of apnea reduced drastically. In next 48 hour period, baby had only 2 episodes of apnea, which also subsided on their own. We believe that it is an easy bedside method to provide gentle tactile stimulation, and can be tried in cases of intractable apnea. The rate of stimulation can be set as per the respiratory rate of ventilator. The impact can be set by setting Peak Inspiratory Pressure (PIP). We suggest that this method of providing tactile stimulation should be tested in form of research studies.

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Neonatal Resuscitation Guidelines: India-specific Concerns

There has been increasing use of technology in the delivery room as recommended in the past few editions of the newborn resuscitation guidelines [1]. This poses several challenges in implementation in low-resource settings. There is wide economic inequality in India, and putting the technology into practice raises several concerns in actual practice of these guidelines.

Time of birth finds no mention in the guidelines as timing of birth is taken differently (birth of the head,

delivery of shoulders, cutting of cord etc) in practice. When should the timer be started at birth needs to be precisely defined. This has relevance as timely action is precious at birth.

Delayed cord clamping is recommended for at least 30 seconds for term and preterms not requiring resuscitation. There is no upper limit defined. Putting this step into practice needs clear understanding, communication and defining of roles and responsibilities between the obstetric and neonatal health care providers at delivery. This simple intervention which can be practiced in majority of newborns at birth is under-utilized, and its benefits – not widely recognized.