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IMMEDIATE EFFECT OF HOP BABY® ON POSTURE AND NEUROBEHAVIOR IN PRE-TERM INFANTS IN NICU: CASE STUDY

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KEYWORDS :

Introduction:

Complications of preterm delivery are associated with numerous developmental abnormalities that may impact the overall quality of life of the infant. The literature supports the use of many developmental interventions for premature infants convalescing in the Neonatal Intensive Care Unit (NICU). Interventions have been shown to be beneficial to premature infants by helping to increase weight gain, shortened hospital stay, and improve bonding (Dodd, 2005). A number of devices that support developmental positioning of premature infants are currently in use in many NICU's. However, few of these support devices have been explored to determine the benefits for the infant. The purpose of this study was to evaluate a newly designed positioning device on physiologic and developmental behaviors of 25 -34 week gestation infants in a Level III NICU.

Need of the new positioning device

Positioning with a special device is not a part of routine care. Positioning is usually done with the help of napkins, towels and bottles in the set up. In India, specialized device for positioning in NICU is not available. Nesting, which is used for positioning does not stay in place and usually the purpose is defeated during routine care. Repositioning it is additional work and is often neglected. Also the options for positioning available are very limited with the Nest. Other limitation is that, nesting does not guarantee reduction is stress on the body and developing immature brain.

What is the new positioning device?

Hands For Occupational Positioning (HOP Baby®) a versatile positioning device to be used in Neonatal Intensive Care Unit (NICU) and other settings. Because of its soft material and movable content, it helps reduce the stress on the baby while s/he is busy in various occupations i.e. sleeping, feeding & other. HOP Baby® can be used in any position i.e. prone, supine, side lying or any other position that is comfortable for the baby. In other words, HOP Baby® keeps the baby comfortable in any position. Other benefits of it are describe in the accompanied manual. Thus it is one of the tools with potential to deliver developmentally supportive care. HOP Baby® will take constant and individualized care. It is a form of ultra-early intervention during hospitalization and after hospitalization. (Produced by Hands On Therapy Concepts Pvt. Ltd.)

Directions for the use of the device

The device comes with HOP Baby® Positioning Options Manual. Manufacturer recommends it to be used after prescription by registered practitioner and monitored by the NICU team during use. It also advices to order two set for nonstop care. Very thoughtful feature of this device is provision for writing the name of the baby to prevent infection. The response to HOP Baby® should be monitored by response of State, Autonomic, Attentional/ interactive, Motor systems.

Materials and methods

We compared the effect using The Infant Positioning and Assessment Tool (IPAT). The IPAT, Infant Positioning Assessment Tool, (Koninklijke Philips Electronics NV) was developed to standardize best positioning practice in NICU. The IPAT is a reliable, easy to use pictorial directory of appropriate positioning for preterm infants. An objective and measureable assessment of infant positioning is warranted to improve consistency in nursing practice; which affects neonatal developmental outcomes. Using the IPAT tool, paired with one to one bedside education can improve positioning consistency across shifts and experience.

The IPAT evaluates posture at the head, neck, shoulders, hands, hips, knees/ankles/feet. A two point scoring system is used with a score of 2 for appropriate positioning, a 1 for acceptable alternative positioning and a 0 for unacceptable positioning. A full score of 12 was indicative of perfect positioning according the IPAT. A score of 9 to 12 was acceptable as it accommodated for the asymmetry of positioning often needed when technology interfaces are present. Scores of 8 or lower indicate a need for repositioning.

NIDCAP® (Newborn Individualized Developmental Care and Assessment Program) OBSERVATION SHEET: This we used to identify stress behaviors and self-regulatory behaviors. We used it to modify the position according to the behavior of the neonate. We observed for signs of overstimulation like Gaze aversion, Frowning, Sneezing, Yawning, Hiccupping, Vomiting, Mottled skin, Irregular respirations, Apnea, Increased oxygen requirement, Heart rate changes, Finger splaying, Arching, Stiffening, Fussing, Crying

Methodology:

A preterm male infant born at 28 weeks' gestation weighing 1300 grams was admitted to Ace Children's Hospital, Dombivili, Maharashtra, India. We contacted parents of the baby and explained about the potential benefits of new device and took consent to use. The use of the device was done after autoclaving. We used two devices for achieving desire position. The final aim of the positioning was to avoid any postural stress on the neonate and no neurobehavioral signs of stress.

Results:

Indicator	SCORE	
	PRE Intervention	Post Intervention
Shoulder	0	2
Hands	0	1
Hips	0	2
Knees, Ankle, feet	0	2
Head	1	2
Neck	0	1
Total	1	10

The score of 10 is considered Ideal Cumulative Score according to interpretations guidelines of the IPAT. Also, there was a reduction in the stress signs after positioning with HOP Baby®, as noted on the NICAP® OBSERVATION SHEET. As reported by the staff nurse, baby slept for longer hours and did not move for long time. They were happy with colorful device and found soothing during tense & busy working schedule. Parents also liked it because of color, shape and feeling of the device.

Conclusions

HOP Baby is good option for positioning the low birth weight, pre term baby to reduce postural stresses and neuro protection of immature nervous system. There is need to perform randomized controlled trial with other devices to choose the best option for positioning.

References

1. Als, H., & McAnulty, G. B. (2011). The Newborn Individualized Developmental Care and Assessment Program (NIDCAP) with Kangaroo Mother Care (KMC): Comprehensive Care for Preterm Infants. Current Women's Health Reviews, 7(3), 288–301. http://doi.org/10.2174/157340411796355216
2. Elizabeth Jeanson, One-to-One Bedside Nurse Education as a Means to Improve Positioning Consistency, Newborn and Infant Nursing Reviews, Volume 13, Issue 1, 2013, Pages 27-30, ISSN 1527-3369,
3. S Laudert (2007); Implementing potentially better practices to support the neurodevelopment of infants in the NICU. Journal of Perinatology 27, S75–S93
4. Mary Coughlin, Mary Beth Lohman, Sharyn Gibbins, Reliability and Effectiveness of an Infant Positioning Assessment Tool to Standardize Developmentally Supportive Positioning Practices in the Neonatal Intensive Care Unit, Newborn and Infant Nursing Reviews, Volume 10, Issue 2, 2010, Pages 104-106, ISSN 1527-3369,
5. Bielenik, Łucja & Gold, Christian. (2014). Early intervention for premature infants in neonatal intensive care unit. Acta Neuropsychologica. 12. 185-203.