Gentle handling of fragile preterm for better outcome

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KANGAROO MOTHER CARE

Kangaroo mother care (KMC) was first developed and scientifically evaluated in Colombia over three decades ago as an alternative to incubator care.\textsuperscript{[3,4]} The evidence generated in Colombia enabled KMC to be included in national low birth weight (LBW) guidelines. Recently, with preterm birth becoming the leading cause of under-five mortality and additional evidence on KMC’s mortality benefit, more attention has been focused on scaling up the practice. KMC involves continuous skin-to-skin contact, breastfeeding support, and promotion of early hospital discharge with follow-up. The World Health Organization has endorsed KMC for stabilized newborns in health facilities in both high-income and low-resource settings.

This approach to the care of preterm and/or LBW infants engages and empowers mothers and families as the main providers of the biological (warmth and food) and psycho-emotional (contact, caring, bonding, and comfort) needs of their newborn. Similar to the observation in kangaroos, the infant is placed and held in direct skin-to-skin contact on the mother’s chest in an upright position under her clothes. Once the preterm is hemodynamically stable, KMC should be initiated at the earliest and continued for the maximum possible duration (over 18 h per day). However, initiation, continuity, and duration may vary according to the stability of the infant and the context of care. Other key components of KMC are supported for exclusive and early breastfeeding and timely discharge from the hospital with appropriate follow-up.\textsuperscript{[5]}

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Meta-analyses show that KMC reduces neonatal mortality, halving deaths among LBW babies weighing <2000 g. KMC has multiple other benefits, including reductions in infection and sepsis by nearly 60%, as well as reductions in hypothermia and lower respiratory tract disease, and improved duration of exclusive breastfeeding, weight gain, length and head circumference, maternal-infant bonding, and long-term child development and health. Intermittent KMC may also be beneficial for higher rates of breastfeeding, better short-term physiological regulation, and maternal bonding. KMC can also be used for alleviating pain during minor procedures such as heel prick for glucose monitoring.

NONINVASIVE MANAGEMENT OF HYALINE MEMBRANE DISEASE

Hyaline membrane disease (HMD) is a major cause of respiratory distress and mortality among preterm newborns. The incidence of HMD is reported to be 6.8-14.1% of preterm live births in India. Based on NNPD data with annual births of 27 million, the number of preterm births can be estimated to be over 4 million/year and the annual number of infants with RDS over 300,000. There has been a tremendous change in the management of HMD over the last decade. Increased awareness regarding CPAP and use of bubble CPAP has changed the outcome of preterm babies. Surfactant use and improved techniques of administration-like INSURE have reduced the duration of Neonatal Intensive Care Unit (NICU) stay for these infants.

A SAFE NEONATAL INTENSIVE CARE UNIT ENVIRONMENT

As preterm neonates are vulnerable for sepsis, preventive strategies such as strict hand washing, barrier nursing, and aseptic precautions during procedures can be beneficial in protecting these tiny citizens from the NICU bugs. Sepsis care bundles, rational antibiotic use, and promotion of exclusive breastfeeding are also proven strategies in this context. Early intervention programs for preterm infants positively influence cognitive and motor outcomes during infancy and the cognitive benefits can prolong into preschool age. Co-bedding (placement of twins in the same cot or incubator) can benefit twins as it simulates the environment they share prior to birth. It is based on the concept of twins supporting each other through a series of observed activities, termed “coregulation.” These activities are likely to promote growth and development if allowed to continue after birth. Developmentally, supportive care refers to a range of strategies designed to reduce the stresses of the NICU. These include reducing noise and light, minimal handling, and giving longer rest periods. The sound environment in the NICU may be louder and frequently challenge preterm infants, staff, and parents. The sound levels in NICUs range from 7 to 120 dB and can often exceed the maximum acceptable level of 45 dB. Noise may cause apnea, hypoxemia, alteration in oxygen saturation, and increased oxygen consumption secondary to elevated heart and respiratory rates and hence decrease the amount of calories available for growth. Efforts to lower sound levels in an entire unit including treatment of the neonate in a section of an NICU, or in a “private” room, or in incubators where sound levels are controlled and reducing the sound levels reaching neonates using earmuffs or earplugs may be useful. It is not uncommon to find the whole nursery brightly lit even if only one neonate is being treated. The concept of flexible point lighting source should be introduced. The smallest and the vulnerable infants should not be nursed near a window and, hence, exposed to more sunlight. Density filter sheets in incubators, use of dimmer switch, and policy of day/night rhythms could help in reducing the total light exposure.

The aim of neonatal intensive care is no longer merely survival or avoidance of severe disability but rather the preservation of normal brain function. Innovative and gentle handling of the fragile preterm neonates is the need of the hour and awareness of these concepts should reach all stakeholders including the grass root level.

REFERENCES

1. Howson CP, Kinney MV, Lawn JE. Born Too Soon: The Global Action Report on Preterm Birth. Geneva, Switzerland: World Health Organization; 2012.
2. Blencowe H, Cousens S, Oestergaard MZ, Chou D, Moller AB, Narwal R, et al. National, regional, and worldwide estimates of preterm birth rates in the year 2010 with time trends since 1990 for selected countries: A systematic analysis and implications. Lancet 2012;379:2162-72.
3. Charpak N, Ruiz-Peláez JG, Charpak Y. Rey-Martinez Kangaroo Mother Program: An alternative way of caring for low birth weight infants? One year mortality in a two cohort study. Pediatrics 1994;94(6 Pt 1):804-10.
4. Charpak N, Ruiz-Peláez JG, Figueroa de CZ, Charpak Y. Kangaroo mother versus traditional care for newborn infants ≤2000 grams: A randomized, controlled trial. Pediatrics 1997;100:682-8.
5. Vesel L, Bergh AM, Kerber KJ, Valsangkar B, Mazia G, Moxon SG, et al. Kangaroo mother care: A multi-country analysis of health system bottlenecks and potential solutions. BMC Pregnancy Childbirth 2015;15(Suppl 2):S5.
6. Lawn JE, Mwansa-Kambafwile J, Horta BL, Barros FC, Cousens S. ‘Kangaroo mother care’ to prevent neonatal deaths due to preterm birth complications. Int J Epidemiol 2010;39(Suppl 1):i144-54.
7. Conde-Agudelo A, Díaz-Rossello JL. Kangaroo mother care to reduce morbidity and mortality in low birthweight infants. Cochrane Database Syst Rev 2014;4:CD002771.
8. Moore ER, Anderson GC, Bergman N, Dowswell T. Early skin-to-skin contact for mothers and their healthy newborn infants. Cochrane Database Syst Rev 2012;5:CD003519.

9. Charpak N, Ruiz JG, Zupan J, Cattaneo A, Figueroa Z, Tessier R, et al. Kangaroo mother care: 25 years after. Acta Paediatr 2005;94:514-22.

10. Ludington-Hoe S, Morgan K, Abouelfettah A. A clinical guideline for implementation of kangaroo care with premature infants of 30 or more weeks' postmenstrual age. Adv Neonatal Care 2008;8:S3-23.

11. Aghdas K, Talat K, Sepideh B. Effect of immediate and continuous mother-infant skin-to-skin contact on breastfeeding self-efficacy of primiparous women: A randomised control trial. Women Birth 2014;27:37-40.

12. Chidambaram AG, Manjula S, Adhisivam B, Bhat BV. Effect of kangaroo mother care in reducing pain due to heel prick among preterm neonates: A crossover trial. J Matern Fetal Neonatal Med 2014;27:488-90.

13. Singh M, Deorari AK, Aggarwal R, Paul VK. Assisted ventilation for hyaline membrane disease. Indian Pediatr 1995;32:1267-74.

14. Vidyasagar D, Velaphi S, Bhat VB. Surfactant replacement therapy in developing countries. Neonatology 2011;99:355-66.

15. Raman TS. NICU environment — A need for change. Indian Pediatr 1997;34:414-9.