Review Article

Kangaroo mother care - a simple measure to save the low birth weight babies

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Abstract:

Kangaroo Mother Care-skin to skin contact between the mother and her newborn is the most feasible, low cost and preferred intervention for decreasing morbidity and mortality among low birth weight babies. It has significant role in thermal regulation, preventing hypothermia, sepsis and regulation of vital physiological parameters. It helps in initiation of breastfeeding in newborns. It is an easy and effective method to promote health and well being of Low birth weight babies.

Key Words:

Breastfeeding, Randomized Controlled trial, Thermal regulation, Hypothermia, Hypoglycaemia.

Introduction

Kangaroo Mother Care was introduced in 1978 by Edgar Rey in Bogotr, Columbia as an alternative to standard care for low birth weight babies (LBW). WHO defines KMC with following components: Early, prolonged, continuous (or as much as the circumstances permit)skin to skin contact between newborn and mother(or even father or any other family member)exclusive breastfeeding, early discharge from health facility and close follow up at home.[1]

Effects of KMC

It provides biologically controlled heat source to keep stable LWB babies warm. It is cost-effective and improve neonatal outcome by maintaining baby's temperature and other vitals. Almost two decades of implementation and research have made it clear that KMC provides alternative to incubator care. KMC result in early recovery from hypothermia, reduced morbidities, early discharge from hospital and weight gain amongst LBW stabilized infants [2].Skin to skin contact and promotion of exclusive breastfeeding have been the essential components of NEWBORN CARE programme of Government of India. The Government have been promoting KMC through Facility Based Integrated Management Of Newborn and Childhood Illness(F-IMNCI), Navjaat Shishu Suraksha Karyakaram (NSSK).[3]

KMC is started when baby is stable and on oral feeds. Intermittent KMC can be started in the NICU in babies on OG feed or i/v fluids or requiring low concentration of oxygen.KMC is an effective way to treat LBW baby's need for warmth, growth, well being, breast feeding, protection from infections, safety and care. Initially deviced as an alternative to conventional technology based case, KMC is now considered as a standard of care for LBW infants to conventional technology based care.[1]

LBW Babies And Associated Problems

LBW babies - babies with a birth weight of less than 2500 gram irrespective of the period of their gestation are classified as LBW babies.[4]These include both preterm and term small for date babies. In India 28% of babies are LBW as opposed to about 5-7% newborns in west. In India alone 6 to 8 million LBW infants are born annually.[5]

High incidence of LBW,60-65% in India is due to intrauterine growth retardation.[6]Birth weight is the most important marker neonatal outcome. Due to immaturity of vital organs and lack of immunological response exposes these babies to high risk of infections, respiratory distress syndrome and other neonatal complications resulting in high rate of perinatal mortality and morbidity. Hypothermia and infections are frequently factors for poor outcome of LBW /preterm babies.[7]These babies born in hospitals are kept in incubators or radiant warmers. Neonatal intensive care of LBW babies is difficult in developing countries due to high cost. In KMC mothers are used as incubators in providing controlled heat source and stimulation for LBW infants.

Hypothermia And Thermoregulation

One of the most critical factors in the survival of LBW babies is satisfactory maintenance of their body temperature. A newborn baby is homeothermic with thermostat in the hypothalamus but thermoregulatory efforts are often insufficient in LBW / preterm babies. Normal rectal temperature of newborn is 36.5 -37.5 C. Hypothermia in a newborn baby is defined as skin temperature less than 35.5 C or core temperature less than 36 C.[8]

Neonate have a metabolic response to cooling that involves non shivering thermogenesis due to metabolism of brown fat, which is present at the nape of neck, interscapular region, axilla , groins around kidneys and adrenals. This is the most important source of heat production in newborn.[9,10]

On cold stress triglycerides in brown fat are oxidized to glycerol and fatty acids. Fatty acids are locally consumed for the generation of heat and rich blood supply in brown fat helps transfer this heat to the rest of the body. This reaction increases the metabolic rate and oxygen consumption.

Despite their compensatory mechanism neonates ,particularly LBW babies have limited capacity to thermoregulate due to deficiency of brown fat, relatively large surface area ,poor insulation and poor muscle tone.[9,10]

The thermal neutral environment is defined as the environment temperature at which metabolic demands are minimal to maintain body temperature in the normal range.[11]

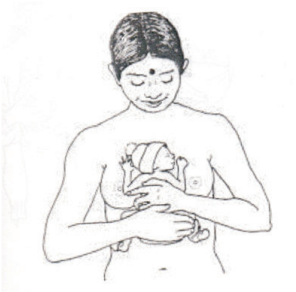
Hypothermia depresses immunological system and predispose the baby to develop septicemia and also depresses the vital functions causing bradycardia , apnea ,fall in blood pressure.LBW babies should always be nursed in thermoneutral environment .Appropriate measures should be taken to keep LBW babies warm for their proper growth and to decrease morbidity and mortality in these babies.

It has been proven that KMC has significant role in protecting Low birth weight babies from hypothermia, hypoglycaemia , sepsis and also improves growth.

When KMC is started?

KMC is started when the baby is hemodynamically stable.KMC can be provided while baby on orogastric tube feeding or oxygen therapy. Mother should be free from any serious infection and should be explained about daily bath, good hygiene ,hand washing and change of clothes. Mother should wear front open dress which is culturally acceptable. Baby should be dresses with cap, socks, diaper and front open sleeveless shirt.[12,13,14]

Kangaroo Position: Baby should be placed between the mother's breast in an upright position, head should be turned to one side in a slightly extended position to keep airways open and to allow eye to eye contact between mother and baby. Hips and arms should be flexed and abducted to maintain frog like position. Baby's abdomen should be at the level of mother's epigastrium. Mother's breathing stimulates the baby thus reducing occurrence of apnea. If baby passes stools or urine diaper is changed and KMC is continued.[12,13,14]



Kangaroo Positioning

KMC can be done as continuous or intermittent ways. In continuous KMC continuous skin to skin contact, 24 hrs a day is provided. In Intermittent KMC, skin to skin contact is provided for limited hours.

Monitoring During KMC

Baby receiving KMC should be monitored closely especially during initial stages of KMC. Mothers should be explained to monitor baby and how to breastfeed the baby in KMC position. If a baby is discharged on KMC ,weekly monitoring of baby is done by public health nurse.KMC is continued till baby achieves weight around 2500gm.Baby is weaned from KMC when baby starts wriggling, feels uncomfortable or visible

sweating present.[12,13,14]

Benefits of KMC

It reduces overall mortality and morbidity. It facilitates early breast feeding, prevents hypothermia and infections. It helps low birth weight babies gain weight. It reduces the hospital stay.

It promotes mother and baby bonding. Skin to skin contact acts as a stimulus to release oxytocin which effects letdown reflex and facilitates breast feeding.

KMC is cost effective and can be given at home.

Conclusion

KMC has been included as one of the key interventions in the global health issues for the reduction of morbidity and mortality in Low birth weight infants. It should be promoted and mothers should be counselled and explained about KMC practice and its benefits for the better care of LBW babies.

Conflict of Interest: None

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