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KANGAROO MOTHER CARE - A BOON TO LOW BIRTH WEIGHT & PRE-TERM BABIES

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ABSTRACT

About 20 million low birth weight (LBW) babies are born every year which are at high risk of neonatal and infant morbidity & mortality.Preterm birth (< 37 completed weeks of gestation) is the largest direct cause of neonatal mortality, accounting for anestimated 27% of the 4-million neonatal deaths every year.Kangaroo Mother Care is a powerful, easy to use, and inexpensive method. It promotes health and well being of infants, born pre-term as well as full term by carrying the infant on the mother's chest with skin to skin contact.Mothers who practise KMC exhibit less maternal stress, fewer symptoms ofdepression, and have a better sense of the parenting role and more confidence in meeting their baby's needs.It is the method, whereby new born babies are placed in an upright position in 24 hour skin to skin contact on mother's chest wall, which has shown significant reduction in the incidence of life-threatening morbidity in stabilized new born babies. Thus this is highly useful method for developing countries like India. It is definitely feasible, acceptable to mothers and can be continued at home in the Indian setup.

INTRODUCTION

Kangaroo mother care or skin-to-skin care is an approach practiced with newborn, usually pre-term infants where the infant is held, skin-to-skin with an adult. Kangaroo care, named for the resemblance to how certain marsupials carry their youngones, was initially developed to care for pre-term infants in areas where incubators are either unavailable. Kangaroo care pursues to provide revived closeness of the newborn with family members by placing the infant in direct skin-to-skin contact. This ensures physiological and psychological warmth and bonding. The parent's balanced body temperature helps to regulate the neonate's temperature more evenly than an incubator, and allows for briskly accessible breastfeeding when the mother holds the baby.[1]

Kangaroo Mother Care is a broader package of care defined by the WHO. Kangaroo Mother Care originally referred only to care of low birth weight and preterm infants, and is defined as a care strategy including three main components like kangaroo position, kangaroo nutrition and kangaroo discharge. Kangaroo position means direct skin-to-skin contact between mother and baby, but can include father, other family member or surrogate also. The infant should be upright on the chest, and the airway secured with safe technique.[6] Kangaroo nutrition implies exclusive breastfeeding, with additional support as required. Kangaroo discharge requires that the infant is sent home early as soon as the mother is able to provide all basic care herself.

HISTORY

'Gene Cranston Anderson' may have been the first to coin the term 'Kangaroo Care'.[2] The defining feature of this is however for skin-to-skin contact, commonly abbreviated as SSC, also STS. This is used synonymously with "skin-to-skin care".[3] Peter de Chateau in Sweden first described studies of "early contact" with mother and baby at birth in 1976, articles do not describe specifically that this was skin-to-skin contact.[8] Klaus and Kennell did very similar work in the USA, better known in the context of early maternal-infant bonding. The first report use of the term "skin-to-skin contact" is by Thomson in 1979[9] and quotes the work of de Chateau in its rationale. This is contemporary or even precedes the origins of Kangaroo Mother Care [10] in Bogota, Colombia.[4]

Dr Rey and Dr Martinez published their results in 1979 in Spanish,[4] and used the term Kangaroo Mother Method. This was brought to the attention of English speaking health professionals in an article by Whitelaw and Sleath in 1985.[12] Gene Cranston Anderson and

Susan Ludington were instrumental in introducing this to North America. Kangaroo Mother Care as a term was first defined at a meeting of 30 interested researchers, attending a meeting convened by Dr Adriano Cattaneo and colleagues in November 1996 in Trieste, Italy, together with the WHO represented by DrJelkaZupan.[13]

The International Kangaroo Care Awareness Day has been celebrated worldwide on May 15 since 2011. It is a day to increase awareness to enhance practice of Kangaroo Care in NICU's, Post-Partum, Labor and Delivery, and any hospital unit that has babies up to 3 months of age.

CLINICAL EVIDENCE

During the early 1990s, the concept was proposed in North America for premature babies in NICU and later for full term babies. Research has been done in developed countries but there is a delay in implementation of kangaroo care due to ready access of incubators and technology. The Cochrane review on "Early skin-to-skin contact for mothers and their healthy babies" provides clinical support for the scientific rationale.[23] However, clinical research studies of early skin-to-skin contact have not been done on unhealthy babies. The available evidence does show that early skin-to-skin contact produces better outcomes, very clearly with respect to breastfeeding, but also with regulation of physiological outcomes.[23]

A randomized controlled trial published in 2004 reports that babies born between 1200 – 2200gm became physiologically stable in skin-to-skin contact starting from birth, compared to similar babies in incubators.[24] In another randomized controlled trial conducted in Ethiopia, survival improved when skin-to-skin contact was started before 6 hours of age.[25] While Kangaroo Mother Care generally implies care of low birth weight and preterm infants, skin-to-skin contact should be noted as normal and basic for all newly born humans.[23] The original research by Thomson showed increased breastfeeding rates when skin-to-skin contact started at birth, and when early breastfeeding was encouraged every two hours.[9] Currently, the impact of skin-to-skin contact on breastfeeding is the scientific rationale for the Baby Friendly Hospital Initiative (BFHI), which requires help to "initiate breastfeeding within one hour of birth". Stipulation for eligibility to receive skin-to-skin contact is becoming fewer; the main compulsion has probably been caregiver confidence and experience.

ELIGIBILITY CRITERIA

Formerly babies who are eligible for kangaroo care include pre-term infants weighing less than 1,500 grams (3.3 lb), and breathing independently. Cardiopulmonary monitoring, oximetry, supplemental oxygen or nasal (continuous positive airway pressure) ventilation, intravenous infusions, and monitor leads do not prevent kangaroo care. In fact, babies who are in kangaroo care tend to be less prone to apnea and bradycardia and have stabilization of oxygen needs.[26]

TECHNIQUE

In kangaroo care, the baby wears only a small diaper and a hat and is placed in a flexed position with maximal skin-to-skin contact on parent's chest. The baby is secured with a wrap that goes around the naked torso of the adult, providing the baby with proper support and positioning, constant containment without pressure points or creases, and protecting from air drafts. If it is cold, the parent may wear a shirt or hospital gown with an opening to the front and a blanket over the wrap for the baby.[28] The tight assortment is enough to stimulate the baby, vestibular stimulation from the parent's breathing and chest movement, auditory stimulation from the parent's voice and natural sounds of breathing and the heartbeat, touch by the skin of the parent, the wrap, and the natural tendency to hold the baby. All this stimulation is important for the baby's development. Birth Kangaroo Care places the baby in kangaroo care with the mother within one minute after birth and up to the first feeding. The American Academy of Pediatrics recommends this practice, with minimal disruption for babies that don't require life support. The baby's head must be dried immediately after birth and then the baby is placed with a hat on the mother's chest. Measurements, etc. are performed after the first feeding. According to the US Institute of Kangaroo Care, healthy babies should maintain skin-to-skin contact method for about 3 months so that both baby and mother are established in breastfeeding and have achieved physiological recovery from the birth process. For premature babies, this method can be used continuously around the clock or for sessions of not less than one hour in duration (the length of one full sleep cycle.) It can be started as soon as the baby is stabilized, so it may be at birth or within hours, days, or weeks after birth. Kangaroo care is different from the practice of baby wearing. In kangaroo care, the adult and the baby are skin-to-skin and chest-to-chest, securing the position of the baby with a stretchy wrap, and it is practiced to provide developmental care to premature babies for 6 months and full-term newborns for 3 months.

HEALTH BENEFITS OF KMC

For Infant:[30]

- It improves growth and development of the infant.
- It higher daily weight gain of the infant.
- It higher weekly increments in head circumference and length of the infant.
- It helps in more time of quiet sleep of the infant.
- It helps in more stable heart rate of the infant.
- It helps infewer sufferings from apnoea and bradycardia.
- It helps in better ability to maintain body temperature of the infant.
- It helps in better oxygen saturation.
- It helps in more physiological stability of the infant.
- It helps in good stress regulatory capacity of the infant.

For Mother:

Kangaroo care is beneficial for parents too because;

- It promotes attachment and bonding.[1]
- Improves parental confidence.[29]
- Helps to promote increased milk production and breastfeeding success.[31]
- Experience the positive effects of infant-parent interaction.
- Exhibit less maternal stress.[30]
- Fewer symptoms of depression.
- Better sense of the parenting role.
- Feel more confident and competent in meeting their baby's needs.[31]

For fathers:

Both preterm and full term infants benefit from skin to skin contact for the first few weeks of life with the baby's father as well. The new baby is familiar with the father's voice and it is believed that contact with the father helps the infant to stabilize and promotes father to infant bonding. If the infant's mother had a caesarean birth, the father can hold their baby in skin-to-skin contact while the mother recovers from the anesthetic.[14]

KMC Promotes more successful breastfeeding of full-term infants:

According to some authorities there is a growing body of evidence that suggests that early skin-to-skin contact of mother and baby stimulates breast feeding behavior in the baby. Newborn infants who are immediately placed on their mother's skin have a natural instinct to latch on to the breast and start nursing, typically within one hour of being born. It is thought that immediate skin-to-skin contact provides a form of imprinting that makes subsequent feeding significantly easier. The World Health Organization(WHO) reports that in addition to more successful breastfeeding, skin-to-skin contact between a mother and her newborn baby immediately after delivery also reduces crying, improves mother to infant interaction, and keeps baby warm. According to studies quoted by UNICEF, babies have been observed to naturally follow a unique process which leads to a first breastfeed. After birth, babies who are placed skin to skin on their mother's chest will:

- Initially babies cry briefly – a very distinctive birth cry.
- Then they will enter a stage of relaxation, recovering from the birth.
- Then the baby will start to wake up.
- Then begin to move, initially little movements, perhaps of the arms, shoulders and head.
- As these movements increase the baby will actually start to crawl towards the breast.
- Once the baby has found the breast and therefore the food source, there is a period of rest. Often this can be mistaken as the baby is not hungry or wanting to feed
- After resting, the baby will explore and get familiar with the breast, perhaps by nuzzling, smelling and licking before attaching.

Providing that there are no interruptions, all babies are said to follow this process and it is suggested that trying to rush the process or interruptions such as removing the baby to weigh or measure is counter-productive and may lead to problems at subsequent breastfeeds.[13]

CONTROVERSY REGARDING KMC-PRACTICE:

Further controversy concerns the 'early discharge', which is defended by the Fundacion Canguru, in Bogota, Colombia, and reported in evidence from a Cochrane review.[25] In its origins, this was contextually correct in protecting hospitalized infants from cross-infections. Some argue however that where hospitals are not so overcrowded, and where home based care is not available or affordable, or where public transport is inadequate, that early discharge should

not be practiced. The main controversy on skin-to-skin contact at a global level relates to the continued reliance on technology for care of low birth weight babies, and an assumption that the basic biological method of care on mother's skin is likely to be harmful or dangerous.

Regarding 'kangaroo nutrition' there is little controversy, with accumulating evidence for the benefits of breastfeeding as such,[21] and evidence that even preterm infants can exclusively breastfeed.[23]

The Cochrane review provides the current evidence base for Kangaroo Mother Care, including only articles that practice all components.[45] In the latest update, sufficient evidence is reported that Kangaroo Mother Care does reduce mortality, and also morbidity in resource limited settings. However, the strength of this evidence is really based on only one article, which starts the kangaroo position component on unstable babies on the first day of life. The main controversy among proponents of Kangaroo Mother Care relates to eligibility to initiate kangaroo position: in the original Rey & Martinez model and as described in the WHO guidelines, [6] the infant should be stable to "tolerate skin-to-skin contact". From a biological and neuroscience perspective, others argue that it is separation from mother that causes the instability.[28]

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CONFLICT OF INTEREST

NIL

CONCLUSION

In conclusion, kangaroo care provides many different benefits for infants and parents. It helps infants transition from intrauterine to extra-uterine life, thermoregulation, stabilizes heart, and respiratory rate, promotes oxygenation with less apnic spells, reduces pain, improves motor system balance, promotes effective breastfeeding, creates a calming effect to reduce stress, enhances bonding, promotes restful sleep and sleep organization, encourages normal growth,

decreases nosocomial infections, and decreases the length of stay in the NICU. Parents report increased feelings of confidence, competence, and feeling needed. Kangaroo care also aids in breastfeeding by helping the mother get milk in faster and helping baby improve the suckling and rooting reflexes. Kangaroo care can be done with fathers as well as even adopted parents to improve bonding and attachment.

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