Kangaroo Mother Care : Appropriate technology for low birth weight babies

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Introduction:

Some 20 million low-birth-weight (LBW) babies are born each year, because of either preterm birth or impaired prenatal growth, mostly in less developed countries. They contribute substantially to a high rate of neonatal mortality whose frequency and distribution correspond to those of poverty.[1, 2] LBW and preterm birth are thus associated with high neonatal and infant mortality and morbidity.[3,4] Of the estimated 4 million neonatal deaths, preterm and LBW babies represent more than a fifth.[5] Therefore, the care of such infants becomes a burden for health and social systems everywhere.

In less developed countries high rates of LBW are due to preterm birth and impaired intrauterine growth, and their prevalence is decreasing slowly. Since causes and determinants remain largely unknown, effective interventions are limited. Moreover, modern technology is either not available or cannot be used properly, often due to the shortage of skilled staff. Incubators, for instance, where available, are often insufficient to meet local needs or are not adequately cleaned. Purchase of the equipment and spare parts, maintenance and repairs are difficult and costly; the power supply is intermittent, so the equipment does not work properly. Under such circumstances good care of preterm and LBW babies is difficult: hypothermia and nosocomial infections are frequent, aggravating the poor outcomes due to prematurity. Frequently and often unnecessarily, incubators separate babies from their mothers, depriving them of the necessary contact.[6]

Low birth weight babies (LBW) are a public health problem in India and they are a major cause of mortality and morbidity. In India 26% of newborn babies are LBW.

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For many small preterm infants, receiving prolonged medical care is important. However, kangaroo mother care (KMC) is an effective way to meet baby's needs for warmth, breastfeeding, protection from infection, stimulation, safety and love.

Bergman defines KMC from a child's point of view as "Hold me, Feed me, Love me."[7]

Father providing KMC

History: It was first presented by Rey and Martinez, in Bogotá, Colombia, where it was developed as an alternative to inadequate and insufficient incubator care for those preterm newborn infants who had overcome initial problems and required only to feed and grow.[6]

What is Kangaroo Mother Care?

It is a method of caring for low birth weight babies. In this method thè infant is placed between a mother's breasts in direct skin to skin contact and is given exclusive breast - feeding. It is particularly useful for care of stable, low birth weight infants. It fosters their health and well being by promoting bonding, effective thermal control, and control of infections due to breast feeding.

Kangaroo Care Provider:

Mother is thè best person to provide KMC. However any other person, preferably thè father or a close family member can also provide KMC for sometime during thè day.

Mother providing KMC

Eligibility Criteria for babies receiving KMC:

1. Birth wt: more than 1800 g: Soon after birth.
2. Birth wt: 1200 - 1799 g : May take a few days before KMC can be initiated.
3. Birth wt: < 1200 g : May take days to weeks before baby's condition allows initiation of KMC.
4. Normal birth wt babies born during winter season.

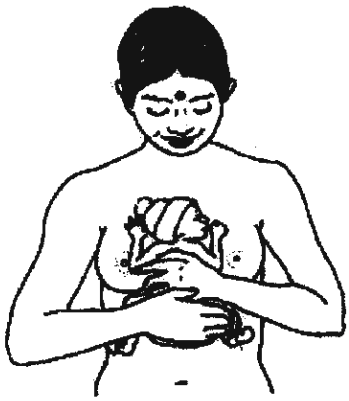
All stable LBW babies are eligible for KMC but very sick babies needing special care should initially be cared for under radiant warmer. KMC should be started after thè baby is hemo-dynamically stable.

Preparation for KMC:

1. Counseling of mother and family members is important.
2. Mothers clothing: KMC can be provided using any front open light dress, in accordance to local culture. KMC works well with blouse & sari, gown & shawl. A suitable apparel that can retain thè baby for extended periods of time can be adapted locally.
3. Baby's clothing: Baby is dressed with cap, socks, nappy and open front sleeveless shirt or "Jhabala".
4. Kangaroo bag.

Kangaroo Positioning

1. The baby should be placed between the mother's breasts in an upright position.
2. The head should be turned to one side and in a slightly extended position. This head position keeps thè airway patent and allows eye to eye contact between the mother and ber baby.
3. The hips should be flexed and abducted in a frog position. The arms should be flexed.
4. The baby's abdomen should be in level with thè mother's epigastrium. Mother's breathing stimulates thè baby, thus reducing occurrence of apnea.
5. The baby 's bottom is supported with sling / binder.



Monitoring of baby in KMC

The following should be ensured:

1. Neck is not too flexed or too extended.
2. Breathing is normal.
3. Feet and hands are warm.

Duration of KMC

The length of skin to skin contacts should be gradually increased up to 24 hours a day interrupted for changing diapers.

Can Mother give KMC during sleep and in resting positions?

The mother can sleep with thè baby in kangaroo position in a reclined or semi recumbent position about 15-30° above thè ground. This can be achieved with an adjustable bed if available or with several pillows on an ordinary bed.

When to discontinue KMC?

Often this is desirable when thè baby reaches full term weight of about 2500 gms, she starts wriggling to show that she is uncomfortable, pulls her limbs out, cries and fusses every time thè mother tries to put her back, skin to skin.

Benefits of KMC

1. It balances benefits of modern technology for treatment of complications and utilization of human resources for supportive therapy and establishment of mother child bonding.
2. It increases rate and duration of breastfeeding.
3. Prolonged skin to skin contact between mother and her preterm / low birth weight infant provides effective thermal control with a reduced risk of hypothermia.
4. Babies gain more weight than when cared for conventionally.
5. Breathing is regular and babies are less predisposed to apnea. KMC protects against nosocomial infection, thereby decreasing mortality and morbidity.
6. Mothers are less stressed during kangaroo care as compared to babies being cared for in an incubator.

Study by Conde-Agudelo A, et al using meta analysis of 16 studies concludes that the use of KMC in LBW infants as an alternative to conventional neonatal care mainly in resource-limited settings.[9]

Recommendation of First European conference and Seventh International Workshop on Kangaroo Mother Care concludes that KMC should begin as soon as possible after birth, be applied as continuous skin-to-skin contact to the extent that this is possible and appropriate and continue for as long as appropriate.[10]

Dr. Joy Lawn's meta-analysis of Kangaroo Care randomized control trials, one of the first meta-analysis that has been conducted on this issue, concluded that KMC substantially reduces neonatal mortality amongst preterm babies (birth weight <2000 g) in hospital, and is highly effective in reducing severe morbidity, particularly from infection. However, KMC remains unavailable at-scale in most low-income countries.[11]

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