

# Kangaroo Mother Care: Technique to be learned from developing countries and barriers for its use

Kashyap L<sup>1</sup>, Patel U<sup>2</sup>

<sup>1</sup>Dr Liladhar Kashyap, Fellow Pediatric Endocrinology, Children's hospital Louisiana state university Health Sciences centre 200 Henry clay ave, New Orleans, LA-70118, USA, <sup>2</sup>Dr. Umesh Patel, Associate Professor (Pediatrics), LN Medical College, Bhopal, MP, India

---

## Abstract

Caring for low birth weight infants imposes a heavy economic burden with unpredictable results. An effective healthcare technique, Kangaroo Mother Intervention (KMI) started in 1978 in Colombia as a way of dealing with overcrowding and scarcity of resources in hospitals caring for low birth weight infants. KMC has shown new way of care of stable LBW newborn in under developed and developing countries. By using KMC technique developed countries can also decrease significant economic burden on health care system.

**Key words:** KMC, Barrier for KMC, Kangaroo Mother Care, Developing countries.

---

## Introduction

Each year about 20 million infants of low birth weight are born worldwide, which imposes a heavy economic burden on healthcare and social systems in developing countries [1]. Medical care of low birth weight neonate is complex, demands an expensive infrastructure and highly skilled staff, un-predictive results and is often a very disruptive experience for families and doctors [2]. Studies have shown that kangaroo mother care improves oxygen saturation [3], regulation of stress responses [4] and brain growth[5] while reducing the risk of hypothermia and unstable heart and respiratory rates [6] and hospital acquired infections. Early KMC in the neonatal intensive care unit (NICU) also increases maternal milk supply and guards against insufficient lactation [7].

Kangaroo Mother Care technique was developed by Edgar Rey, a Colombian pediatrician in 1978, after he faced the problems arising from a shortage of incubators and the impact of separating women from newborns in neonatal care unit. Kangaroo Mother Care (KMC), is a healthcare technique for low birth weight infants that is at least as effective as traditional care in a neonatal care unit [8- 10].

In KMC, babies weighing 2000 g or less at birth and unable to regulate their body temperature remain with their mothers as incubators. Newborns are attached to mother's chests in skin to skin contact, wearing only a nappy and are kept upright 24 hours a day. Mothers can share the role of provider of the kangaroo position with others, especially the babies' fathers, without disrupting breastfeeding routines. The KMC begins as soon as the baby no longer requires other support from the neonatal care unit. Intermittent KMC has been also used in ventilated infants. Stop KMC once infant achieve regulation of their body temperature, at a median age of 37 weeks after conception.

It may be the best option if neonatal care units are unavailable[11]. If a neonatal care unit is available but overwhelmed by demand, by using KMC we can allows rationalized use of incubators by freeing up for sicker infants.[12] Even in well resourced neonatal care units, it still enhances bonding between mother and infant and breast feeding[13].

Resource limited countries like India, where infrastructure like incubator, electricity, trained staff are deficient to manage LBW babies, mother can work like a incubator and provide thermoneutral temperature that is essential for optimum growth of LBW newborn. Even in developed countries where there is overcrowding in NICU and high cost of healthcare, KMC can decrease burden on health care system and decrease the cost significantly.

Manuscript received: 25<sup>th</sup> Apr 2014  
Reviewed: 26<sup>th</sup> Apr 2014  
Author Corrected; 29<sup>th</sup> Apr 2014  
Accepted for Publication: 13<sup>th</sup> May 2014

**Short Communication****Barriers/ Challenges-**

Despite the fact that there is sound evidence about the effectiveness and safety of KMC, a restraining inertia exists, forbidding massive implementation. Many low birth weight newborn never been exposed to KMC. Many pediatricians and nurses have no first-hand experience and thus feel unsure about initiating and sustaining KMC programs. There is lot of barriers of its use. Few are discussed below-

**(A) Barrier at Newborn level**

1. Sick patient- Newborn on ventilatory support and oxygen supplementation. There was general agreement that infants needed to be clinically stable to be eligible for KMC.
2. Presence of umbilical catheters is a prohibiting factor in some NICUs but not in all.
3. Safety issues for very low birth weight infants.
4. Baby comfort

**(B) Barrier at parents level**

1. KMC is judged as sub-standard care because is perceived as the “poor man’s alternative” for developing countries
2. Sleep disturbance and uncomfortable sleep position- Sleeping with the infant skin-to-skin in the same position throughout the night could be difficult.
3. Mother not willing for breast feeding
4. Mother privacy and modesty
5. Parents or carers with important mental, cognitive, or behavioral problems
6. Belief that technology is better than KMC

**(C) Time Related Barrier**

1. Shortage of time because of nuclear family
2. Travelling long hours to attend the KMC clinic
3. Care for other children
4. Difficult to maintain KMC 24 hours.

**(D) Barrier at NICU level / Institute level**

1. Lack of specific guidelines
2. Policies for implementation- There is also variation in NICU policies.
3. Type of technology or equipment being used to care for the infant.
4. Clinical and safety concerns– temperature, airway, infant stress
5. Lack of space

**(E) Barrier at staff level**

1. Lack of trained staff
2. Lack of education and motivation of staff

3. Nursing and medical staff reluctance , they believes that KMC represents extra work.

**(F) Barrier at home & family level**

1. Lack of co-operation by family members and community
2. Poor acceptance and understanding by family
3. Cultural and social norms related to mother and newborn
4. Economic burden- Professional fee
5. Distance

**(G) Country level**

1. KMC has not been included in many country-level government newborn agendas and policies

**(H) Barrier related to environment**

1. Risky environments (such as extreme climates, floods, landmines, or conflict areas)
2. Dangerous traffic conditions may.

KMC is a natural way to raring of LBW newborn. Different studies have prove clinical efficacy of this technique. Developed countries can decrease significant economic burden and spare trained working hand to deal other more emergency situations. If we overcame the barriers, KMC can play cost effective and significant role not only in under developed or developing countries but also developed countries. By adopting universal kangaroo mother care, mortality of LBW babies can be decreased significantly. Despite a multiple barriers, by motivating the parents and staff we can progress to “Universal Kangaroo Mother care” and decrease the morbidity and mortality significantly.

**References**

1. Department of Reproductive Health and Research, World Health Organization. Kangaroo mother care: a practical guide. 1st ed. Geneva: WHO, 2003.
2. Mew AM, Holditch-Davis D, Belyea M, Miles MS, Fishel A. Correlates of depressive symptoms in mothers of preterm infants. Neonatal Netw. 2003 Sep-Oct;22(5):51-60.
3. Bier JB. Ferguson AE. Morales Y, et al. Comparison of skin-to-skin contact with standard contact in low-birth-weight infants who are breast-fed. Arch Pediatr Adolesc Med. 1996;150:1265–1269.

**Short Communication**

4. Neu M, Laudenslager ML, Robinson J. Coregulation in salivary cortisol during maternal holding of premature infants. *Biol Res Nurs*. 2009 Jan;10(3):226–40.
5. Nem-Yun Boo, Jamli FM. Short duration of skin-to-skin contact: Effects on growth and breastfeeding. *J Paediatr Child Health*. 2007;43:831–836.
6. Bergman NJ, Linley LL, Fawcus SR. Randomized controlled trial of skin-to-skin contact from birth versus conventional incubator for physiological stabilization in 1200- to 2199-gram newborns. *Acta Paediatr*. 2007;93:779–785.
7. Hurst NM, Valentine CJ, Renfro L, Burns P, Ferlic L. Skin-to-skin holding in the neonatal intensive care unit influences maternal milk volume. *J Perinatol*. 1997 May-Jun;17(3):213-7.
8. Rey E, Martínez H. Manejo racional del niño prematuro. Bogotá, Colombia: Universidad Nacional, Curso de Medicina Fetal, 1983.
9. Charpak N, Ruiz-Pelaez JG, Figueroa de CZ, Charpak Y. Kangaroo mother versus traditional care for newborn infants  $\leq$  2000 grams: a randomized, controlled trial. *Pediatrics*. 1997;100: 682-10.
10. Ludington-Hoe SM, Ferreira CN, Goldstein MR. Kangaroo care with a ventilated preterm infant. *Acta Paediatr*. 1998 June;87(6): 711-2
10. Lincetto O, Nazir AI, Cattaneo A. Kangaroo mother care with limited resources. *J Trop Pediatr*. 2000 Oct;46(5): 293-5.
11. Charpak N, Ruiz-Pelaez JG, Figueroa de Calume Z. Current knowledge of kangaroo mother intervention. *Curr Opin Pediatr*. 1996 Apr;8(2): 108-12.
12. Anderson GC, Moore E, Hepworth J, Bergman N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev*. 2003;(2): CD003519.

.....

**How to cite this article?**

Kashyap L, Patel U. Kangaroo Mother Care: Technique to be learned from developing countries and barriers for its use. *Pediatr Rev: Int J Pediatr Res* 2014;1(1):25- 27. doi: 10.17511/ijpr.2014.i01.05

.....