International Journal of Medical Science and Education
An official Publication of Association for Scientific and Medical Education (ASME)
Original research Article

EVALUATION OF EARLY KANGAROO MOTHER CARE IN VERY LOW BIRTH WEIGHT BABIES ADMITTED IN NICU

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Received: 12/12/2016 ***Revised: 24/02/2017*** ***Accepted: 15/03/2017***

ABSTRACT

Background: On a global scale, India accounts for 27% of neonatal deaths, 40% of low birth weight (LBW) babies, and a quarter of preterm births. Premature births contribute to over one-third of these deaths. Recent surveys indicate median survival rates of 58% and 88% among Extremely Low Birth Weight (ELBW) and Very Low Birth Weight (VLBW) infants, respectively. **Material & Methods:** The present cross sectional, prospective study was carried out at department of pediatrics, at our tertiary care hospital. The study duration was of one year from January 2016 to December 2016. In this prospective study we enrolled 50 children of very low birth weight (less than 1500 kg) admitted in NICU enrolled by simple random sampling. **Results:** Out of the total enrolled children 36% were males and 64% were females. Mean weight of study participants was 1.3 ± 0.14kg. Out of total, 21% children were of less than 1000 Gms; birth weight 1000-1249 was seen in 27% children, birth weight 1250-1500gms was seen in 52% children. On the basis of gestational age of mothers, 18% were in group of less than 28 weeks, 32% in group of 28-30 weeks, 44% in group of 30-32 weeks and 06% were in group of more than 32 weeks. Pearsons coefficient (r) with early initiation of KMC and reduction in NICU stay was (r value = 0.511) (p value < 0.05) and reduction in complications in newborns was (r value = 0.516) (p value < 0.05). **Conclusion:** We concluded from the present study that early initiation of KMC and reduction in NICU stay and reduction in complications in newborns. There was no mortality reported in present study.

Keywords: kangaroo mother care, very low birth weight, NICU.

INTRODUCTION:

On a global scale, India accounts for 27% of neonatal deaths, 40% of low birth weight (LBW) babies, and a quarter of preterm births **(1).** Premature births contribute to over one-third of these deaths. Recent surveys indicate median survival rates of 58% and 88% among Extremely Low Birth Weight (ELBW) and Very Low Birth Weight (VLBW) infants, respectively **(2).** However, a growing disparity is observed, with the affluent and increasingly affordable middle class accessing advanced care for their neonates, while the underserved urban poor and those in rural areas continue to contribute

significantly to high neonatal morbidity and mortality rates in India **(3).**

To address this discrepancy, Kangaroo Mother Care (KMC) emerges as a potential solution, especially for babies on respiratory support. Implementing KMC widely could not only reduce the cost associated with the care of sick babies but also diminish mortality and morbidity **(4).** KMC is a cost-effective method for caring for low-birth-weight infants, particularly those weighing less than 2000 grams at birth. It involves skin-to-skin contact, exclusive breastfeeding, and early discharge with adequate follow-up **(5).**

The original KMC method, involving ideally 24 hours per day of mother–infant skin-to-skin care (continuous KMC), was designed as an alternative to conventional care in incubators, particularly in low-income settings **(6).**

Despite the proven benefits of KMC, it has not been widely practiced in small and sick newborns treated in Neonatal Intensive Care Units (NICUs) **(7).** This pilot study aims to assess the feasibility and efficacy of early KMC in very low birth weight babies receiving respiratory care in NICUs.

MATERIALS & METHODS

The present cross sectional, prospective study was carried out at department of pediatrics, at our tertiary care hospital. The study duration was of one year from January 2016 to December 2016. A sample size of 50 was calculated at 90% confidence interval at 10% acceptable margin of error by epi info software version 7.3.

In this prospective study we enrolled 50 children of very low birth weight (less than 1500 kg) admitted in NICU enrolled by simple random sampling. Institutional Ethics Committee Clearance was obtained before start of study and written and informed consent from their mother and father for the study was obtained from all the patients. Strict confidentiality was maintained with patient identity and data and not revealed, at any point of time.

Babies on ventilator, hemodynamically unstable, with UVC, UAC, with major congenital anomalies in situ were excluded from the study. Were excluded from the present study. All data were entered in the MS office 2010 spread sheet and Epi Info v7.

Data analysis was carried out using SPSS v22. Qualitative data was expressed as percentage (%) and Pearson's chi square test was used to find out statistical differences between the study groups and sensitivity, specificity, positive predictive value and negative predictive value were calculated. If the expected cell count was < 5 in more than 20% of the cells then Fisher's exact test was used. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05 and highly significant if p value less than 0.01.

RESULTS

In the present study, we enrolled 50 children of very low birth weight (less than 1500 kg) admitted in NICU of our hospital. Out of the total enrolled children 36% were males and 64% were females. Mean weight of study participants was 1.3 ± 0.14kg. Out of total, 21% children were of less than 1000gms; birth weight 1000-1249 was seen in 27% children, birth weight 1250-1500gms was seen in 52% children. On the basis of gestational age of mothers, 18% were in group of less than 28 weeks, 32% in group of 28-30 weeks, 44% in group of 30-32 weeks and 06% were in group of more than 32 weeks. (Table 1)

In the present study, out of total enrolled participants, on the basis of KMC initiation we calculated Pearsons coefficient (r) and found that correlated results with early initiation of KMC and reduction in NICU stay (r value = 0.511) (p value < 0.05) and reduction in complications in newborns (r value = 0.516) (p value < 0.05). There was no mortality reported in present study. (Table 2)

Table 1: Distribution of study participants according to study parameters.

Parameters		No. of patients
Gender	**Male**	36%
	Female	64%
Birth weight	**<1000**	21%
	1000-1249	27%
	1250-1500	52%
Gestational age	**<28 weeks**	18%
	28-30 weeks	32%
	30-32 weeks	44%
	>32 weeks	06%

Table 2: Comparison of KMC initiation among participants.

KMC initiation	R value	P value
NICU stay	0.511	<0.05
Complications	0.516	<0.05

DISCUSSION

In the present study, we enrolled 50 children of very low birth weight (less than 1500 kg) admitted in NICU of our hospital. Out of the total enrolled children 36% were males and 64% were females. Mean weight of study participants was 1.3 ± 0.14kg. Out of total, 21% children were of less than 1000gms; birth weight 1000-1249 was seen in 27% children, birth weight 1250-1500gms was seen in 52% children. Similar findings were reported in a study conducted by Mukesh Gupta et al conducted to assess the role of KMC in low birth weight newborns and found that KMC is effective and safe in low birth weight newborns and as effective on traditional care with incubators in NICU **(8).**

In the present study, On the basis of gestational age of mothers, 18% were in group of less than 28 weeks, 32% in group of 28-30 weeks, 44% in group of 30-32 weeks and 06% were in group of more than 32 weeks. Similar findings were reported in a study conducted by Sandeep Kadam et al conducted to assess the role of KMC in low-birth-weight newborns and found that A notable 79% of mothers expressed comfort during Kangaroo Mother Care (KMC), and 73% felt confident in their ability to continue providing KMC at home. This suggests the feasibility of KMC, given that mothers are already admitted to hospitals and actively participating in the care of their newborns. The positive responses from mothers indicate the potential for KMC to be seamlessly integrated into their care routines, both within hospital settings and as a continued practice at home **(9).**

In the present study, out of total enrolled participants, on the basis of KMC initiation we calculated Pearsons's coefficient (r) and found that correlated results with early initiation of KMC and reduction in NICU stay and reduction in complications in newborns. There was no mortality reported in present study. Similar findings were reported in a study conducted by Veena Rani Parmar et al conducted to assess the role of KMC in low-birth-weight newborns and found that during Kangaroo Mother Care (KMC), there were no recorded instances of hypothermia or apnea. Impressively, KMC garnered high acceptance, with 96% of mothers, 82% of fathers, and 84% of other family members endorsing the practice. Among healthcare workers (HCWs), 94% considered KMC to be a safe and conservative method for caring for Low Birth Weight Infants (LBWI). Noteworthy benefits were reported, with 57% noting positive impacts on babies' behavior, 94% on maternal confidence, and 80% on lactation. Additionally, 85% reported a decrease in the use of heating devices in the Neonatal Intensive Care Unit (NICU), and 79% stated that KMC did not add to their workload. These findings underscore the safety, acceptance, and

positive outcomes associated with the implementation of KMC **(10).**

CONCLUSION

We concluded from the present study that early initiation of KMC and reduction in NICU stay and reduction in complications in newborns. There was no mortality reported in present study.

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