

ORIGINAL ARTICLE

OBSERVATION ON INCREASE IN WEIGHT OF LOW BIRTH WEIGHT (LBW) BABIES BY IMPLEMENTING KANGAROO MOTHER CARE (KMC) TECHNIQUE

Purnendu Kumar Singh¹, Kumar Amritanshu², Bijoy Mukherjee³

HOW TO CITE THIS ARTICLE:

Purnendu Kumar Singh, Kumar Amritanshu, Bijoy Mukherjee. "Observation on Increase in Weight of Low Birth Weight (LBW) Babies by Implementing Kangaroo Mother Care (KMC) Technique". Journal of Evidence based Medicine and Healthcare; Volume 1, Issue 17, December 29, 2014; Page: 2162-2165.

ABSTRACT: Kangaroo Mother Care (KMC) is a practical technique for nursing of low birth weight babies by direct skin to contact with the mother. This study was undertaken to observe and record the effect of KMC with focus on increase in weight of at term low birth weight (LBW) babies weighing less than 2000 grams. The study was conducted over thirty six month's period from July 2011 to June 2014. The method of care consisted of skin to skin contact between the mother and the infant along with exclusive breast milk. Upon implementation of KMC babies under observation showed satisfactory gain in weight of average 25grams per day and an average hospital stay of 10 days. KMC aims towards achieving good weight gain in LBW babies. It is a simple hassle free technique which can be implemented at all levels of health care.

KEYWORDS: Kangaroo mother care, Low birth weight, Exclusive breastfeeding.

INTRODUCTION: Kangaroo mother care (KMC) is the term given to that method where a new born low birth weight baby is kept in direct skin to skin contact with the mother. This is a practically applicable technique for care of LBW babies. KMC involves exclusive breast feeding and promotes infant bonding with mother. KMC needs to be promoted for the caring of LBW babies.

MATERIAL & METHOD: This study was conducted by the Department of Community Medicine in the Department of Paediatrics of Katihar Medical College during thirty six months period from July 2011 to June 2014. Permission of the Institutional Ethics Committee was obtained prior to the study. The study included 100 at term LBW neonates of weight less than or equal to 2000 grams. Critical and malformed neonates and those mothers who were critically ill were excluded. Only stable babies delivered in the operation theatre of the Department of Obstetrics and Gynaecology, which were less than or equal to 2000 grams were admitted in the Department of Paediatrics for observation. Mothers and at least one female family member were explained about methods and advantages of KMC. All the babies admitted for observation KMC ward were given 24 hours continuous KMC even during night. Babies were removed from mother's chest during breast feeding, changing diapers and during mother's personal works. Babies were weighed naked on an electronic weighing machine on admission in KMC and daily during morning ward round until discharge. All babies were exclusively breast fed and those who were not sucking adequately were given expressed breast milk (EBM) with spoon. All babies were clinically examined daily for any signs of ill health. Babies with suspected or confirmed illness requiring advance life support were withdrawn from KMC for treatment and new babies were admitted to maintain the sample size. Babies were discharged when they showed a weight gain of minimum

ORIGINAL ARTICLE

15gm/day for at least seven consecutive days, were stable without any signs of sepsis and mothers were confident for caring babies at home. On discharge mothers were advised for follow-up every week till babies weights reached to 2500grams. At the time of discharge they were advised to bring the babies immediately if they observed any abnormality. The main aim was to measure progress in weight and record duration of hospital stay.

OBSERVATION: In this study we maintained the sample size to observe the effect of KMC. Many mothers opted out of KMC as they became confident to handle the baby and wanted to continue KMC at home. We then included new mothers who were willing to perform KMC under observation. Among the at term 100 babies included for study, 40 were female and 60 were male. The weights of the babies were ranged between 1650 grams to 2000 grams. We observed an average increase of 15gm per day in male babies and 13gm per day in female babies. Refer to Tables 1&2.

Day (D)	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
No. (n)	60	60	60	60	60	60	60	60	60	60	60
Avg. Wt. (gm)	1803.51	-3	-5	-8	-11	+13	+19	+28	+34	+38	+42
Avg. Wt. (gm)/day	NIL	↓	↓	↓	↓	↑	↑	↑	↑	↑	+14.7
Range	348	↓	↓	↓	↓	↑	↑	↑	↑	↑	386
SD	105.75	↓	↓	↓	↓	↑	↑	↑	↑	↑	137.75

Table 1: Increase in weight of male babies in gm/day

D=Day.
 0=Birth.
 Avg =Average.
 ↑=Increase & ↓=Decrease.
 Wt=Weight.
 SD=Standard Deviation.

Day (D)	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
No. (n)	40	40	40	40	40	40	40	40	40	40	40
Avg. Wt. (gm)	1721.34	-4	-5	-6	-9	+13	+18	+23	+28	+32	+38
Avg. Wt. (gm)/day	NIL	↓	↓	↓	↓	↑	↑	↑	↑	↑	+12.8
Range	124	↓	↓	↓	↓	↑	↑	↑	↑	↑	138
SD	35.51	↓	↓	↓	↓	↑	↑	↑	↑	↑	51.51

Table 2: Increase in weight of female babies in gm/day

D = Day.
 0 = Birth.
 Avg =Average.

ORIGINAL ARTICLE

↑=Increase & ↓=Decrease.

Wt = Weight.

SD = Standard Deviation.

DISCUSSION: KMC has been proposed as an alternative method for caring LBW neonate. The method was first implemented by Roy and Martinez in 1979 at Maternal and Child Institute of Bogota, Colombia. It consists of skin to skin contact, exclusive breast feeding and early discharge.^{1,2} In Nepal few institutes have adopted this technique to care for LBW babies.³ Because of loss of extra cellular fluid around 5-15% of weight loss occurs in newborn babies. The lowest weight loss occurs by 4-6 days of life and then gradually weight gain starts and birth weight is usually regained by 14-21 days of life.⁴ Discharge criteria in this study for LBW babies was a weight gain of at least 15 gm /day for six consecutive days. Average duration required to observe weight gain after starting KMC was 3-4 days on an average. Various other studies had shown that KMC babies had better average weight gain per day. A study done by Rao et al. from Mumbai showed average weight gain of 23.99 grams in KMC groups.⁵ Similarly Gupta M. et al. from Rajasthan showed average weight gain of 21.3 grams/day and Paul et al. from Delhi found average weight gain in KMC babies after first week of life were 15.9 gm /day.^{6,7} In our study we recorded an average weight gain of 15gm/day in males and 13gm/day in females. Gupta M et al observed mean duration of hospital stay was 15.5 days.⁶ KMC in infants in Merida had discharged at 13.4 days after enrolment.⁸ In Delhi average day of hospital stay was 27.2±7 days.⁸ In our study average duration of hospital stay was 10 days. KMC promotes exclusive breast feeding, ensures temperature maintenance, decrease neonatal morbidities.⁹ These findings were supported by our study also as all the babies were exclusively breast fed there was no clinical episode. Diaz-Rossello JL et al. found no evidence in difference in infant mortality in KMC as compared to conventional care after stabilisation.¹⁰

CONCLUSION: KMC is a useful and practical method of nursing LBW babies. Other advantages of this technique are low cost, promotes exclusive breast feeding practice and increases mothers confidence in handling small babies and builds good mother and infant bonding. As the sample size in our study is small (100 neonates) and the study was non-comparative, a future study with large sample size and comparative study between KMC and Conventional Method of Care of LBW baby can be undertaken to observe more reliable effect on weight gain and duration of hospital stay.

REFERENCES:

1. Whitelaw A, Sleath K. Myth of Marsupial Mother; Home Care of very Low Birth Weight Babies, in Bogota, Columbia. Lancet 1985; 25: 1206-1208.
2. Charpak N, Figueroa Z. Kangaroo Mother Care Programme Practical Rules. Bogota, Columbia: Kangaroo Foundation; 2001.
3. K Subedi, Aryal DR, Gurubacharya SM. Kangaroo Mother Care for Low Birth Weight Babies: Aprospective Observational Study. J. Nepal Paediatr. Soc. Vol.29 No.1.

ORIGINAL ARTICLE

4. Dierdre Ellard, Diane M Anderson; Nutrition in; John P. Cloherty, Eric C. Eichenwald, Ann R. Stark; Manual of Neonatal Care. 6th Edition; Lippincott, Williams & Wilkins, 2008, 114.
5. Suman RP, Udani R, Nanavati R. Kangaroo Mother Care for Low Birth Weight Infants: A Randomized Controlled Trial. Indian Pediatr 2008; 45 (1): 17-23.
6. Gupta M, Jora R, Bhatia R. Kangaroo Mother Care (KMC) in LBW Infants- A Western Rajasthan Experience. Indian J Pediatr 2007; 74 (8): 747-9.
7. Ramanathan K, Paul VK, Deorari AK, Taneja U and George G. Kangaroo Mother Care in Very Low Birth Weight Infants. Indian J Pediatr 2001; 68 (11): 1019-1023.
8. Cattaneo A, Davanzo R, Worku B, Surjono A, Echeverria M, Bedri A, Haksari E, Osorno L, Gude B, Setyowireni D, Quintero S, Tamburlini G. Kangaroo Mother Care for Low Birth Weight Infants: A Randomized Controlled Trial in Different Settings. Acta Paediatrica 1998; 87 (9): 976-985.
9. Feldman R, Eidelman Al. Intervention Programs for Premature Infants. Clin Perinatol 1998; 25: 613-626.
10. Conde-Agudelo A, Diaz-Rossello JL, Belizan JM; Kangaroo Mother Care to Reduce Morbidity and Mortality in Low Birth Weight Infants; published in The Cochrane Library, Issue 4, 2000.

AUTHORS:

1. Purnendu Kumar Singh
2. Kumar Amritanshu
3. Bijoy Mukherjee

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Community Medicine, Katihar Medical College, Katihar, Bihar.
2. Associate Professor, Department of Paediatrics, Katihar Medical College, Katihar, Bihar.
3. Professor & HOD, Department of Community Medicine, Katihar Medical College, Katihar, Bihar.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Purnendu Kumar Singh,
Assistant Professor,
Department of Community Medicine,
Katihar Medical College,
Katihar-854105, Bihar.
E-mail: purnendukumars@yahoo.com

Date of Submission: 18/12/2014.
Date of Peer Review: 19/12/2014.
Date of Acceptance: 26/12/2014.
Date of Publishing: 29/12/2014.