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RESEARCH ARTICLE

DOES KANGAROO MOTHER CARE IMPROVE BREASTFEEDING PRACTICES? A SINGLE INSTITUTION EXPERIENCE ON HEALTHY TERM NEONATES

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Abstract

Early initiation of breastfeeding following birth has several advantages such as weight gain, improved immune status and better development. However, for exclusive breastfeeding to be successful, appropriate latching is necessary. Several studies across the globe have noted that improper feeding techniques have resulted in early breastfeeding cessation.Kangaroo mother care is a tool to help provide skin-to-skin contact, especially in preterm infants, to develop bonding, prevent hypothermia and allow adequate breastfeeding. KMC is seldom practiced in healthy term neonates. However, we propose that KMC can help improve breastfeeding practices in this subgroup of infants. The aim of this study is to compare the LATCH scores in term neonates that receive KMC (group A) and don't receive KMC (group B).

Introduction:-

KMC is a universally accessible and physiologically sound strategy of care for all infants, but especially for preterm infants. It consists of three components: 1) Direct Skin Contact 2) Unique breastfeeding 3) Assistance to the mother-infant pair.[2] Kangaroo mother care is defined as continuous (as close to 24 h a day as possible) skin-to-skin contact between mother and her infant, ensured by placing infant in a strictly upright position on mother's chest (kangaroo position). Nutrition is based on breast milk, but not limited to it.[4, 5] As soon as the infant is stable and receiving oral feeds, KMC can be introduced. Babies with severe illnesses and those needing special care are given priority.

Utilizing kangaroo mother care is economical and has numerous benefits for both mother and child.[7] It improves the regulation of the infant's heartbeat. Babies that receive KMC are found to have improved breathing and stable oxygen saturation levels.[7] The stimulation of breast milk production by skin-to-skin care ensures that the infant receives all the benefits of breast milk [2]. Additionally, it helps calm the baby andreduces wailing [8] When a baby is calm, food can be properly absorbed in the stomach, resulting in faster growth. On the mother's chest, the infant's temperature stabilises significantly faster than in an incubator.[2, 9] Having close proximity to the mother's body improves the tactile and visual sensation, and thereby improves feeding.[10, 11]

Six months of exclusive breastfeeding (EBF) is recommended by the World Health Organization (WHO).[1] Epidemiological evidence suggests that EBF protects against a variety of contagious, chronic conditions, and malignant diseases.[2–7] Despite these benefits, WHO-recommended EBF for six months is not widely practiced.

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According to studies, the highest rates of breastfeeding cessation occur during the first month postpartum, making the early postnatal period a crucial time to recognize breast - feeding problems.[10–13]. LATCH score assessment tool has been used to identify mothers who need breastfeeding support to sustain lactation.

Hence we conducted this study assess the effect on KMC on the LATCH score in healthy neonates.

Methods:-

Source of Data:

This is a prospective randomized Interventional Study conducted in A.J.Institute of Medical Science, Mangalore, from March 2021 to August 2022(18 months).All babies born after 37 completed weeks of gestation in A.J.Institute of MedicalScience, Mangalore during the study period were included. Any baby born before 37 weeks of gestation, Baby with major congenital anomaly, Non-vigorous babies (No or gasping breathing efforts, poor muscle tone or bradycardia.), Meconium-stained amniotic fluid, Respiratory distress or via Lower Segment Cesarean Section was excluded from the study.

Randomisation:

Every baby born after 37 completed weeks of gestation via Normal Vaginal Delivery on odd number dates were allocated to Group A and every baby born after 37 completed weeks of gestation via Normal Vaginal Delivery on even number dates were allocated to Group B. LATCH score was assessed in all babies on day 0 of life, followed by which

For Group A – Kangaroo Mother Care was provided for the baby after which, LATCH score was assessed on day 3 of life.

For Group B – LATCH score was assessed on day 3 of life, without providing Kangaroo Mother Care.

Method:-

Every baby born after 37 completed weeks of gestation via Normal Vaginal Delivery on odd number dates were allocated to Group A and every baby born after 37 completed weeks of gestation via Normal Vaginal Delivery on even number dates were allocated to Group B.

The initial steps of newborn care remained the same in both the groups, i.e to provide warmth by placing the baby under radiant heat warmer. Mothers were trained for breastfeeding and KMC using video assistance and with the help of the experienced nursing staff.

LATCH score was assessed for all babies on day 0 of life, within 6 hours of life, followed by which

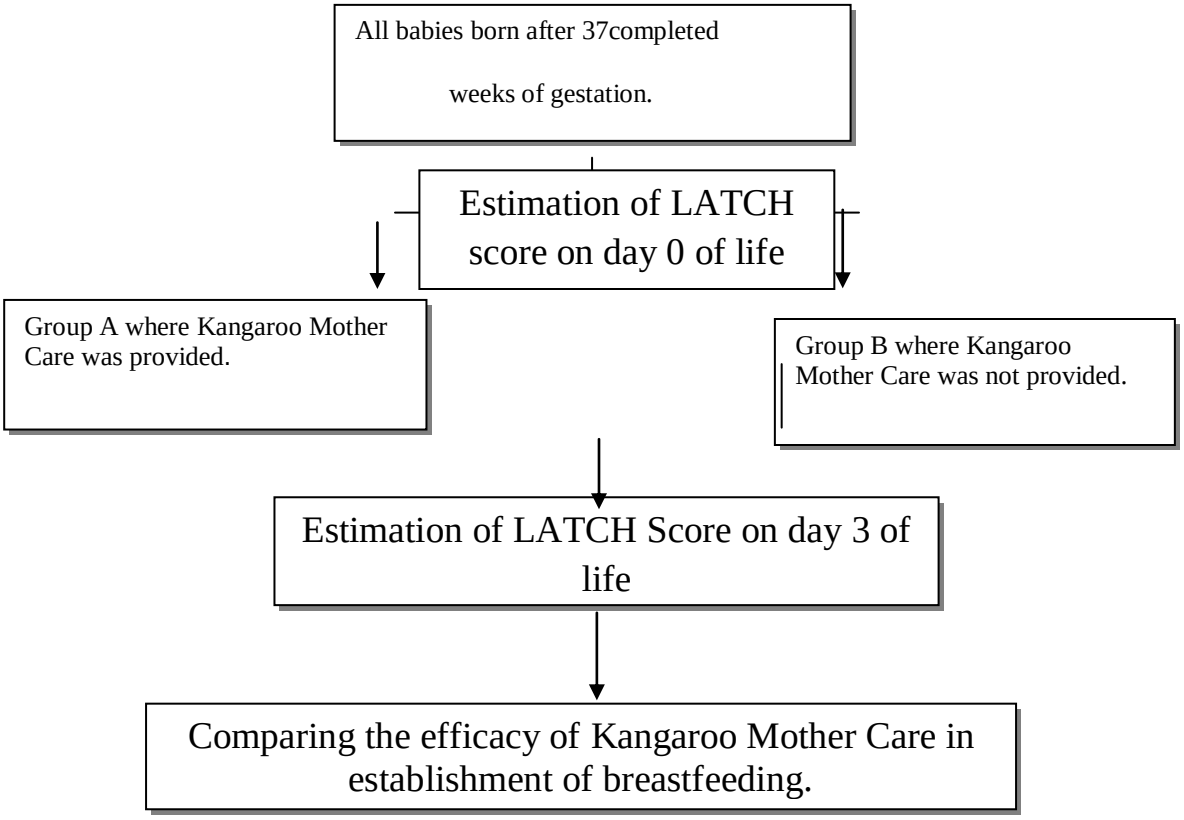
In Group A, Kangaroo Mother Care was provided for the baby.

In Group B, Kangaroo Mother Care was not provided for the baby.

After which, LATCH Score was again assessed for all the babies of both the groups on day 3 of life, as a part of evaluation of the study. Followed by which the efficacy of Kangaroo Mother Care in establishment of breast-feeding is compared between the two groups.

Statistical Analysis

The category data was analysed by using frequency percentages and represented with bar charts and pie charts. Qualitative data was analysed by using petty test and Z test wherever applicable. A value of P less than 0.05 was considered as statistically significant difference between the 2 groups. Whatever data was collected was transferred to a Microsoft Excel 2013 sheet and the data was analysed by using SPSS software version 23 was used for the analysis .



Sample Size Estimation

Sample Size: In order to detect a difference of 12%in the outcome between the two groups, assuming 95% confidence interval and 90% power, Sample size estimated for the study is 219 in each group, hence the total of 438 neonates will be considered for the study.

The sample size (n) is calculated according to the formula:

$$n = \frac{\left[Z_{1-\frac{\alpha}{2}} + Z_{1-\beta}\right]^2 [p_1 q_1 + p_2 q_2]}{[p_1 - p_2]^2}$$

Results:-

In this study, we included 438 neonates, and studied the influence of KMC on the LATCH score. The mean gestational age of the neonates at birth was 38.4 +/- 4 weeks. The mean weightof the neonates at birth was 2891 +/- 484 mg. All the neonates were initiated on breastfeeding within half an hour of delivery.

We found that the average age of the mothers included in the study was 24.57 years, which is similar to then findings of other studies done in our country.

The number of successful pregnancy and delivery can influence, either positively or negatively, the breastfeeding practices. In our study, we found that majority of our study participants were Primigravida. This would indicate that they would have lesser knowledge regarding breastfeeding as compared to those mothers that have born offspring in the past. To negate this effect, the same was demonstrated with the help of videos.

When we analysed the education levels in these mothers, we found that majority of them were educated only up to middle school (42.92%). Majority of our study participants had good family support (62.34%). However, we found that pre-delivery knowledge was adequate only in half the population. Pre-delivery knowledge of breastfeeding was assessed by a questionnaire which asked questions about the initiation of feeding, exclusive breastfeeding, top up feeds and fads. These factors can significantly affect the breastfeeding practice, and thereby, the neonatal outcomes.

PARAMETER	L	A	T	C	H

Count, N	438	438	438	438	438
Mean, μ	1.423	1.650	2	1.988	1.322
Standard Deviation, σ	0.486	0.476	0	0.106	0.474

Table 1:- Mean Values Of Latch.

The mean LATCH score on day 0 was 8.22 +/- 1.2, which is indicative of good latching for breastfeeding. Using Mann Whitney U test, we correlated the LATCH score at day 0 and day 3, and we found that there is a significant improvement in the LATCH scores overall. (The z-score is -13.91314. The p-value is < .00001. The result is significant at $p < 0.05$.)

The LATCH score were divided into <7 or >7. When we correlated the LATCH scores with the application of KMC, we found that there was a statistically significant improvement of LATCH score with KMC. (The chi-square statistic is 20.9495. The p-value is < .00001. The result is significant at $p < .05$)

LATCH SCORE	KMC GIVEN	NO KMC
LATCH <=7	56 (79.00) [6.70]	102 (79.00) [6.70]
LATCH >7	163 (140.00) [3.78]	117 (140.00) [3.78]
Column Totals	219	219

Table 2:- Correlation Of Latch Score Between The Two Groups.

Discussion:-

The stimulation of the production of breast milk by direct skin-to-skin contact ensures that the infant receives all of the advantages of breast milk, including the milk that is biologically appropriate for humans.[2] It results in less weeping from the infant.[8] When a baby is calm, the stomach is better able to absorb the nutrients in the meal, which results in the baby developing more quickly. The temperature of the infant returns to normal on the mother's chest far more quickly than it does in an incubator.[2, 9] Having close proximity to the mother's body improves the tactile and visual sensation, and thereby improves feeding.[10, 11] Additionally, Every newborn, when placed on her mother's abdomen, soon after birth, has the ability to find her mother's breast all on her own and to decide when to take the first breast feed. This is called the 'Breast Crawl'.

A number of studies have documented the benefits of kangaroo mother care (KMC). At the 6-week follow-up, Ramanathan reported that the proportion of mothers exclusively breastfeeding their infants was double in the KMC group compared to the control group.[12] Also, Suman discovered that exclusive breastfeeding improved in the KMC group (98 % versus 79 %).[13]

Bicalho reported that kangaroo units performed better in terms of exclusive breastfeeding at discharge (69.2 vs. 23.8%). Brooks discovered that a group of infants who underwent KMC in (NICU) were exclusively breastfed until hospital discharge.[17] The results of the Boo study revealed a higher rate of breastfeeding at discharge (29.7% versus 14.4%).[16] Honorina reported that the kangaroo group had a higher rate of exclusive breastfeeding at hospital discharge (82.6 versus 0%). [18] In this study, however, we didn't have follow up or assess the effect of KMC on morbidity and mortality. However, there are a few studies performed that have highlighted the effect of KMC on the above mentioned parameters.In her interventional study, Kamalifard found that mothers who began KMC immediately after birth for 60 minutes had longer durations of exclusive breastfeeding at the end of the fourth month (119.8 13.27 vs. 110.75 24.25 days).[19] This study's methodology was distinct from our own. Kamalifard evaluated term infants who were discharged from the hospital after birth and followed them for four months.[19] In his study, Nagais demonstrated that the performance of KMC in the first 24 hours after birth and 24 hours after birth have no effect on mortality in the first 28 days after birth. [20] A study by Heidarzadeh revealed a 4-fold increase in exclusive breastfeeding by KMC at the time of hospital discharge. Honorina found that infants who underwent KMC were 2.34 times more likely to be exclusively breastfed upon hospital discharge.[18] Venancio demonstrated that KMC is a protective factor for discharge breastfeeding.[24]

Conclusion:-

Kangaroo mother care (KMC) appears to be an effective method for establishing and increasing exclusive breastfeeding. KMC is a suitable substitute for CMC (conventional methods of care). It is a safe, effective, and feasible method of improving outcomes for term neonates at discharge.

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