

“Breast Milk Application-An Emerging Trend to Reduce Timing of Cord Separation (Tcs) Among Newborns”.

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Abstract: Umbilical cord as a vital part supports the foetus in the womb in supply of oxygen and other nutrients. Majority i.e., 135 millions of live births are occurring in less developed countries in a year. Omphalitis is the major cause of neonatal mortality and morbidity in these countries. As per many researchers, breast milk is found to be an effective topical agent in reducing timings of cord separation and thereby reducing the risk of omphalitis. The study conducted BLDEA's hospital, Bijapur. 60 newborns delivered by C.S and normally were selected out of which 30 in experimental group and 30 in control group using purposive sampling technique. An observational checklist was used to note the timing of cord separation. Result of the post test score revealed that the breast milk application had great impact in reducing the timing of cord separation. The post test mean score in Experimental group (8.8) is found to be higher than the post test mean score in Control group (5.1). The t-test value was 25.9 which is statistically significant at $p < 0.05$. This proves the effectiveness of breast milk application on the umbilical cord.

Key Terms: Breast milk, normal newborn, timing of cord separation.

I. Introduction

At birth the baby is separated from the mother by cutting the umbilical cord leaving behind 3-4cm of the umbilical stump [1]. The umbilical cord is the life giver for the fetus but at the same time it could be a life destroyer of the newborn by acquiring infection. Omphalitis, umbilical cord infections is the major cause of neonatal mortality and morbidity in developing countries with approximately 1 million newborn dying annually worldwide [2]. The earlier the cord separated the lesser the chances of risk of infection. Topical applications like Ethanol, Povidine Iodine used for umbilical cord care is associated with skin irritations and allergies whereas breast milk as a natural topical agent has no adverse effects and also helps shortening the timing of cord fall [3].Dirk

1.1 RATIONALE

A survey conducted by Registrar General of India reveals that infectious diseases among the newborns is the second most leading cause of death next to respiratory diseases among which umbilical cord infections are found to be an important cause [4]. (MOHFW, Govt. of India, New Delhi, Sept. 2005).

In most developing countries like India practice of domiciliary birth conducted by birth attendants is still prevalent leading to higher risk of neonatal and maternal infections and increasing the likelihood of pathogenic microorganisms entering the cord stump[5].

In remote areas of India, where there is no proper accessibility to health care services, breast milk is an easily available less expensive substitute for other topical agents used for umbilical cord care.

1.2 OBJECTIVES

To assess the drying and separation of umbilical cord after breast milk application.

To find out the effectiveness of breast milk application in reducing the timing of cord separation (TCS) among newborns.

To compare the TCS between the interventional and control group.

1.3 HYPOTHESIS

There will be a significant difference in the timing of cord separation among the interventional and control group.

II. Supporting Literatures

A Randomized controlled trial was conducted at a primary level newborn nursery at Babol university Hospital among 373 singleton full term newborns to note the effectiveness of topical application of human milk, ethyl alcohol 96% and silver sulfadiazine on umbilical cord separation time. The study concludes that there is a

significant difference in the time of cord separation and revealed that the breast milk is a could substitute for other topical agents [6].(Ahmadpour-kacho M, Zahedpasha Y et al,2006)

A longitudinal study was conducted to compare the effect of topical application of breast milk and dry cord care on bacterial colonization and cord separation time in neonates. About 118 neonates were involved in the study and the study results reported that the common organisms noted in the stump were S. Epidermidis, S. Aureus and E. Coli. The study also concluded that the cord separation time in breast milk groups was shorter than dry cord care group [7]. Farahani. L and Mohammadzadeh

III Methodology

1.1 Design: True Experimental Design, Post test only with control design.

1.2 Setting: BLDEA’s Hospital & Research Centre, Bijapur.

1.3 Participants: Normal newborns delivered by normal vaginal birth and caesarean section.

3.4 Sample: 60 newborns (30 in experimental and 30 in control).

3.5 Sampling Technique: Simple random sampling technique.

3.6 Tools used:

➤ Questionnaire for collecting baseline data:- It includes 10 questions related to the base line details of the newborn like Hours after delivery, sex of the baby, weight, length, Apgar score, Mode of delivery, Birth order, Residence and any risk of infection.

➤ Observational checklist:- It is used to assess the timing of cord separation which includes the observations like the appearance and process of separation of cord.

3.6 Intervention:

✓ Consent was obtained from the concerned authorities and the participant’s parents.

✓ Intervention was explained to the mother.

✓ Mother was asked to wash hands, clean the breast and manually express fresh breast milk into a sterile bowl.

✓ Approximately 2 ml breast milk was collected.

✓ Following the principles of cord care procedure, breast milk was applied using a sterile swab twice in a day for 3 days.

✓ Post assessment was done on the fourth day for both groups after intervention was completed.

✓ The timing of cord separation was observed and noted.

3.7 Data Analysis: Descriptive and Inferential Statistics.

IV Findings and Discussion

Part I: Findings Related To The Demographic Variables.

- Majority of newborns (34) were between 13 to 24 hours after birth.
- Most of them were male babies (33 male newborns)
- The weight of majority newborns fell in the range of 2.5 – 2.9 kgs in both group in which 19 belonged to experimental and 21 belonged to control.
- Most of them (46) were born through normal vaginal delivery and all had normal APGAR scores.

Part II: a) Findings Related To Drying Of Cord and Its Separation

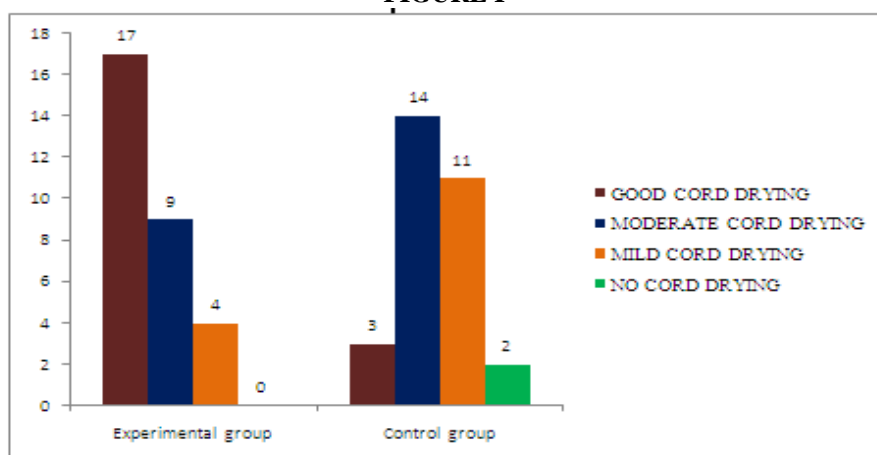
SCORING	RANGE OF SCORE	EXPERIMENTAL GROUP N=30		CONTROL GROUP N=30	
		FREQUENCY	PERCENT	FREQUENCY	PERCENT
GOOD CORD DRYING	10-12	17	56.7%	3	10%
MODERATE CORD DRYING	7-9	9	30%	14	46.6%
MILD CORD DRYING	4-6	4	13.3%	11	36.67%
NO CORD DRYING	0-3	0	0	2	6.5%

TABLE I

SCORING	RANGE OF SCORE	EXPERIMENTAL GROUP N=30		CONTROL GROUP N=30	
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MILD CORD DRYING	4-6	4	13.3%	11	36.67%
NO CORD DRYING	0-3	0	0	2	6.5%

The above table shows majority (17) newborns in the experimental group had a good cord drying status whereas in control on 3 had good cord drying status on 4th day of observation. The is represented in figure I below.

FIGURE I



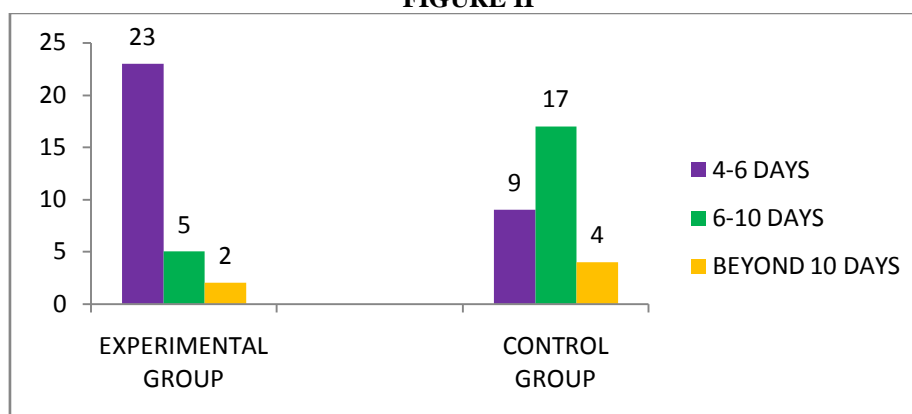
b) FINDINGS RELATED TO TIMING OF CORD SEPARATION

TABLE II

TIMING OF CORD SEPARATION	EXPERIMENTAL GROUP N=30		CONTROL GROUP N=30	
	FREQUENCY	PERCENT	FREQUENCY	PERCENT
BETWEEN 4-6 DAYS	23	76.6%	9	30%
6-10 DAYS	5	16.6%	17	56.7%
BEYOND 10DAYS	2	6.67%	4	13.4%

The table II depicts that majority in experimental group (23) had their cord fallen between 4-6 days of breast milk application whereas in control group only 9 had their cord fallen in between 4-6 days.

FIGURE II



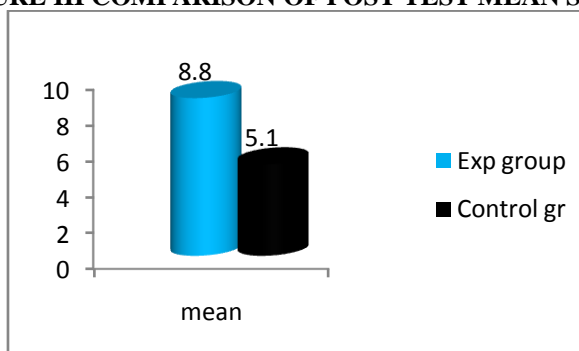
Part C: - Findings related to the effectiveness of breast milk in reducing Timing of Cord separation (TCS).

The result shows that the calculated t-value i.e., $t = 25.9$ is more than the tabulated t-value i.e., $t = 2.002$ at df 58 which is significant at 0.05 level. Hence the hypothesis H_1 is accepted.

Part III:- Findings related to comparison of Timing of Cord Separation (TCS) between Experimental and Control groups.

The post test mean score in Experimental group is found to be 8.8 which is higher than the post test mean score in control group i.e., 5.1. This shows the umbilical cord has fallen early in experimental group than in Control group proving the effectiveness of breast milk application.

FIGURE III COMPARISON OF POST TEST MEAN SCORE



The post test mean score in E group is found to be 8.8 which is higher than the post test mean score in C group which is 5.1. This shows that the umbilical cord has fallen early in E group than in C group proving the effectiveness of breast milk application.

V. Conclusion

Breast milk with its antimicrobial properties acts as a defensive agent protecting the cord from getting infected as the newborn has no protective flora at birth. In addition to this breast milk is also having influence over falling of umbilical cord causing early separation thereby decreasing the exposure to environment resulting in less chances of infection. Hence it is concluded that breast milk is the best and effective tropical agent in reducing timing of cord separation (TCS) among newborn.

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