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ORIGINAL ARTICLE

FACTORS FOR CESSATIONS OF EXCLUSIVE BREAST FEEDING AT END OF 6 WEEKS IN HEALTHY TERM AND LATE PRETERM NEONATES BORN IN A HOSPITAL SET UP IN NORTH INDIA

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ABSTRACT

Background: Millions of deaths can be averted by scaling up exclusive breast feeding, EBF rate. By end of 2 months only 69% of mothers and by 4-6 months only one quarter of mothers are giving EBF to their babies. Factors influencing non-initiation or early cessation of exclusive breastfeeding had already been evaluated under NFHS data but only for babies born in community settings, these factors need to be investigated for the neonates born out of community settings**.**
Objectives: To identify risk factors for early cessation of exclusive breast-feeding.
Setting: Teaching Hospital in north India**.**
Subjects: Mothers giving birth to term or late pre-term healthy neonates were enrolled within 48 h after delivery and followed up till 6th postnatal week.
Results: A total of 350 mothers were enrolled. At the end of 1st, 2nd and 6th week the proportion of EBF decreased to 95%, 93.3% and 75.8% respectively. Risk factors associated with early cessation of exclusive breastfeeding were cesarean section at end of six weeks was primiparous mothers (RR: 1.95, 95%CI: 1.01-3.79).
Conclusion: First time mothers need more counseling on exclusive breast-feeding.

Key words: Exclusive Breast Feeding, Cessation of breast feeding, Primiparous

INTRODUCTION

Early and exclusive breast-feeding, (EBF) has been proven to reduce the childhood mortality and morbidity.[1-3]In the lancet's child survival series in 2003-04, it was estimated that breastfeeding alone if universalized, could reduce under-5 child deaths by 13%. First hour feeding has increased from 15.8% to 23.4% as per the largest data on breastfeeding from India .[2,3] However, proportion of infants on EBF decreases by 2nd ,4th and 6th months to 69 %,51% and 27.6% .[3,4]Data is available on rate and cessation of EBF in different states, caste, religion and socioeconomic group in India but factors influencing cessation of EBF have not been studied. We are far from the 10th five year plan goals, of initiation of first feed within hour in 50% and EBF up to age of 6 months in 80% infants. The current study was planned to prospectively analyze factors for early cessation of EBF in healthy term and late preterm babies (35-36$^{6/7}$ weeks), born in a hospital set up.

METHODS

This prospective observational (knowledge, attitude and practices) study was conducted from July –September 2008 (6 weeks period of enrolment and 6 weeks as period of follow up). **Healthy** Term and late preterm term babies (35-36$^{6/7}$weeks) weighing $\geq$ 2000 grams at birth born in our hospital were enrolled and subsequently followed till end of 6 week of post natal age. Exclusion criteria were; need of intensive care by mother or baby, mothers with ecclampsia, on cytotoxic drugs, had caesarean section done under general anaesthesia, post partumhaemorrhage, major congenital

malformations and suspected metabolic disorders in newborn baby. Data was collected within the first 48 hours of delivery through a semi-structured interview conducted bedside. This information included the mother's: socio-demographic characteristics, clinical details on gestation age, birth weight, sex of the baby, mode of delivery, prenatal counselling on feeding, mother's knowledge regarding breastfeeding, attitudes and beliefs, her confidence in breast feeding and intention of continuing it, and problems faced by mothers in initiation and continuation of breast feeding during hospital stay. This interview was conducted by a trained social worker, under supervision of a paediatric consultant. These mothers were followed at end of 1, 2 and 6 weeks and inquired about status of exclusive breast feeding. The follow up period, was restricted till 6 weeks of postnatal age only due to logistic difficulty of mother's inability to come for follow up of healthy babies. There was no home visit by the health care workers. First visit was combined with her routine visit of follow up for neonatal jaundice and visit at 6 weeks was combined with routine visit for vaccination. She had to make one extra visit at end of 2 weeks. On each of these visits, she was reinforced for exclusive breast feeding. We also inquired about mode, adequacy, and type of feeds. In case she was not giving EBF then what were the reasons for doing so were recorded.

Primary outcome of interest was to analyze the factors for cessation of Exclusive Breast Feeding at end of 6 weeks of postnatal age.Secondary outcome was to find out the incidence of EBF, factors causing delay in first hour breast-feeding and problems faced in giving breast-feeds during hospital stay. Previous study on problems on breast feeding with 250 babies showed that 37.5% mothers had some problem during hospital stay. Hence, a sample size of 240 was adequate for studying the problems, expecting a drop out of 25% we took a sample of 350 mother-baby dyad. Statistical analysis was done using SPSS version 13.0. P value of <0.05 was taken as significant. No adjustment was made for multiple comparisons.

RESULTS

During the enrolment period 412 neonates were born, of which 52 babies were less than 35 weeks of gestation age and less than 2000 grams at birth.

Knowledge, Attitudes and Beliefs regarding breastfeeding

Baseline knowledge regarding benefits of colostrum and breastfeeding was present in 93% mothers. However, nearly half of the mothers expressed need of water along with breast feeds. Decision of breast feeding was made during antenatal period by 89.4% mothers. Around 83% of the primiparous mothers had seen some other mother nursing and feeding the baby. Confidence of initiation of feeds was absent in 11.4% of the mothers. Only, 41.4 % mothers felt that formula feed was not required by the baby. All of them felt that after 4 months either top milk / water was needed by the baby.

Table 1: Baseline variables of the mother-infant pair

Variables	Number (%)
Mother-Infant pair analysed	350
Mean birth weight	2730 ± 424 grams
Term neonates	294 (84)
Female: Male	0.88:1
Literacy level of mothers (at least high school)	294 (84)
Low Socioeconomic status	137 (39.1)
Occupation (house wife)	303 (86.6)
Supervised Antenatal period	311 (88.9)
Antenatal Counseling on breastfeeding	31 (8.9)
Primi / first time mothers	221 (63.1)
Caesarean section rate	124 (35.4).
First one hour breast-feeding	213 (60.9)
Pre-lacteal feeds	81 (23.1)
Problems in initiation of EBF	125 (35.7)

Problems faced in giving breast feeds during hospital stay

During the hospital stay 35.7% mothers faced problems in giving breastfeeds, of which "perception of not having enough milk" was the most common problem, in 16.9 % mothers. Among the other problems, 7.4% of the nursing mothers had cracked /sore nipples, engorgement of breasts and 11.4% mothers had difficulty in giving EBF because of flat / inverted / retracted nipples. Multiple problems were faced by 5.7% of the mothers. These problems were solved before discharge.

Table 2: Characteristics of mothers giving Exclusive breast Feeds and non-Exclusive Breast Feeds on Follow up

Factors	1 week, n=265 (75.5)			2 week, n=120 (34.3)			6 week, n=146 (53)		
	EBF (n=252)	Non EBF (n=13)	P value	EBF (n=112)	Non EBF (n=8)	P value	EBF (n=141)	Non EBF (n=45)	P value
Education									
Illiterate	16(6.3)	1(7.7)	0.332	8 (7.1)	1(12.5)	0.870	6 (3.2)	-	0.789
Occupation									
House wife	217(86.1)	12(92.3)	0.526	98(87.5)	8(100)	0.204	118(83.7)	37(82.2)	0.820
Socioeconomic status									
Low	95(37.7)	7(53.8)	0.920	38(33.9)	3(37.5)	0.591	42(29.8)	12(26.7)	0.688
Middle	135(53.6)	3(23.1)		65(56)	5(62.5)		88(62.4)	29(64.4)	
High	52(8.7)	3(23.1)		9(8.1)	0		11(7.8)	4(8.9)	
Mode of delivery									
Vaginal	169(67.1)	5(38.5)	**0.035**	75(67)	4(50)	0.330	90(63.8)	32(71.1)	0.372
Caesarean Section	83(32.9)	8(61.5)		37(33)	4(50)		51(36.2)	13(28.9)	
Sex (Male)	134(53.2)	6(46.2)	0.662	59(52.7)	7(87.5)	0.057	69(48.9)	27(60)	0.197
Parity									
G_1	162(64.2)	6(46)	0.187	79(70.5)	7(87.5)	0.306	89(63.1)	36(80)	**0.036**
$\geq G_1$	90(35.8)	7(64)		33(29.5)	1(12.5)		52(36.9)	9(20)	
Pre-lacteal feeds given	62(24.6)	4(30.8)	0.950	3430.4)	2(25)	0.884	34(24.1)	17(37.8)	0.071
Knowledge of breast feeding									
Yes	233(92.5)	13(100)	0.305	104(93)	8(100)	0.436	131(92.9)	42(93.3)	0.923
No	19(7.5)	0		8(7.1)	0		10(7.1)	3(6.7)	
Problems of feeding									
Nipple anomaly	29(11.5)	1(7.7)	0.137	11(9.8)	1(12.5)	0.860	17(12.1)	3(6.7)	0.860
Engorgement	21(8.3)	2(15.4)		12(10.7)	-		10(7.1)	5(11.1)	
Not enough milk	44(17.5)	4(30.8)		24(21.4)	2(25)		24(17)	8(17.8)	
None	158(62.5)	6(46.2)		65(58)	5(62.5)		90(63.8)	29(64.4)	
Top milk given	44(17.5)	4(30.8)	0.225	24(21.4)	8(100)	0.451	24(17)	11(24.4)	0.269
Formula feeds									
Not Good	174(69)	8(61.5)	0.570	78(69.6)	6(75)	0.750	98(69.5)	28(62.2)	0.364
Good	78(31)	5(38.5)		34(30.4)	2(25)		34(30.5)	17(37.8)	
Water needed with feeds									
Yes	149(59.1)	9(69.2)	.470	65(58)	4(50)	0.658	80(56.7)	25(55.6)	0.890
No	103(40.9)	4(30.8)		47(42)	4(50)		61(43.3)	20(44.4)	
Family Support									
Yes	245(97.2)	13(100)	0.533	111(99)	6(75)	**0.000**	139(98.6)	43(95.6)	0.224
No	7(2.8)	-		1(1)	2(25)		2(1.4)	2(4.4)	
Cultural factors present	24(9.5)	1(7.7)	0.826	15(13.4)	1(12.5)	0.943	18(12.8)	3(6.7)	0.262

Note: Values in parenthesis denotes percentage

Breast feeding was initiated within one hour of birth by 60.9% mothers. Delay in first feed was influenced by mode of delivery. First hour feeding was less in neonates who were given pre-lacteal feeds (p=0.024) and in neonates who were born late preterm (p=0.041). Education status of the mother and gender of the child had no influence on initiation of first feed. Further, babies born by caesarean section got their first feed late than the babies born by vaginal delivery.

Around 90% of the mothers were giving EBF by the time they were discharged from the hospital. Follow up rate at end of first, second and six weeks was 75.7%, 34% and 53%. The rate of cessation of EBF had increased to 24.2% at end of 6 weeks of postnatal age. On univariate analysis mode of delivery as caesarean section at end of 1 week, andprimi-parity at end of 6 weeks of postnatal age were important risk factors for cessation of exclusive breastfeeding. None of the factors were significant on multivariate analysis.

Since primiparity was significant risk factor for the cessation of EBF at six weeks hence, subgroup analysis of these variables in first time mothers and those mothers who had experience

of motherhood earlier was done. The variables that had significance on multivariate analysis were: breast feeding problems i.e anatomical/ physiological condition of breast and nipple, poor perception of milk (p=0.000), poor knowledge of breastfeeding and colostrum (p= 0.010), delay in decision to start feeds, belief that water is needed with feeds (p=0.008) and cultural taboos (p=0.015).

DISCUSSION

At the end of 6 weeks around 24.2% mothers were not giving EBF. In a community setting this rate is around 31% as per the National Family Health Survey-3 data.[3]In various studies from developed countries like Missouri, California and Ankara also, the significant risk factor behind suboptimal breastfeeding in first few days of post-partum period was caesarean section and relatively young age of the mothers.[5-8]In a similar study on clinical support and psychological risk factors association with discontinuation of breastfeeding it was found that the cessation of EBF at 8 weeks was nearly similar 29% and the main barrier to EBF was lack of support from the health care system in form of no visit by health care nurse.[9]Science there was no home visit by the health care worker so we couldn't analyze the impact of the same. Lactation problems faced by mothers in first few days do have a bearing on total duration of EBF. Those mothers who had problems of latching initially had high rate of discontinuation at 4 weeks and 8 weeks.[4,11-12]In other study from Boston, it was cultural factors and return to work that was the predominant factor for cessation of EBF.[10] In our study, problems of initiation of breast feeding was faced by 35.7% mothers but these problems had no bearing on exclusive breastfeeding rate at six weeks of postnatal age. It was the problems faced by first time mothers that were responsible for cessation of EBF at the end of six weeks.

First hour feeding was is in up to 60.9% mothers. According to the NFHS data first hour feeding rate in community set up is 25% only and it's the education status, wealth index and urban background that play a significant role in delaying first feed.[3] In a hospital set up it was the mode of delivery and priming with the pre-lacteal feeds that lead to delay in initiation of first hour feed. Mothers who delivered by caesarean section had problems in feeding in first week of life probably because of making of breast feeding position and pain but this did not remain the significant risk factor for discontinuation of EBF at the end of 6 weeks.

Strength of the studywas factors influencing cessation of EBF were analyzed in the mothers having institutional delivery, with bed side counselling on exclusive breastfeeding during hospital stay, although lacking postnatal home visit by health care staff. A comparison of various risk factors; socio-demographic, knowledge, attitude, belief and problems of giving breast-feeds in primiparous and second time mothers was done and it was found that first time mothers faced more problems in all the spheres other than socio-demographic.

This study had certain limitations. Firstly, it was restricted to a single hospital setting which is predominantly a referral setup getting referral from nearby states. So the findings of the study are not a true representation of Chandigarh city only. Secondly, the sample size needed to study the influence of each variable was not adequate. There was no home visit by health care worker. Finally, the study had a short follow up period up to 6 weeks of post natal age only.

CONCLUSION

Cessation of exclusive breast feeding at 6 weeks of life is more in first time mothers. Exclusive breast feeding rate was less in mothers who underwent caesarean section. Hence women delivering by caesarean section and facing motherhood for the first time need more attention to further improve the rate of Exclusive Breast Feeding.

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