

Original Article

Effect of antenatal expression of breast milk at term to improve lactational performance: a prospective study

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Abstract

Objectives: To study the effect of antenatal expression of breast milk at term in improving lactational performance as compared to conventional method of initiation of breast feeding. **Methods:** A prospective study was carried out in 100 booked cases at term. Prior examination was done to exclude any inverted or cracked nipples and appropriate treatment instituted. Daily expression of the breast discharge once at least (any time of the day) preferably during bathing time after 37 weeks of pregnancy was introduced in randomly selected 50 pregnant women (study group). The remaining 50 women formed the control group. **Results:** The study group did not find it difficult to initiate breast feeding after vaginal or cesarean delivery and sufficient milk started flowing within half an hour of initiation of breast feeding in 48 (96%) women. In the control group, it happened in 36 (72%) women only. Statistical analysis using the Fisher exact test showed significant difference in the results of both the groups. No increase in any delivery complication was found associated with the study group. There was one partial breast feeding failure in the control group but none in the study group. **Conclusion:** Daily antenatal breast milk expression after 37 completed weeks of pregnancy significantly reduced the time for establishing full breast feeding and reduced breast feeding failures.

Key words: antenatal milk expression, lactational performance, time for establishment of full breastfeeding

Introduction

Breast feeding is highly recommended for newborns. Few would dispute the statement of Academy of Pediatrics that "human milk is the preferred feeding for all infants, including premature and sick newborns with rare exceptions". Benefits of breast feeding are not

limited to the infant but extend to the mothers by improving post partum recovery, partial birth control, and reduced risk of ovarian and breast cancers¹. For these reasons and others, breast feeding through the first 6 months of life and continuing at least until 12 months of life continues to be strongly recommended. If such a recommendation is to be successfully implemented, breast feeding should be encouraged and supported prenatally, perinatally and postnatally.

Obstacles to the establishment of breast feeding include inadequate prenatal education and promotion, physician undereducation and lack of support, cultural views, promotion of commercial formulas, hospital practices, and lack of follow up after discharge from the hospital.

Paper received on 19/12/2006 ; accepted on 24/01/2009

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Additional barriers include parental educational levels and knowledge about breast feeding ², partner's attitude³, and maternal employment. Identifying obstacles to breast feeding has resulted in multitargeted approach to the promotion of breastfeeding like, baby friendly hospital initiative ⁴. It has been shown that nursing early and often is crucial to ultimate breast feeding success.

The motivation and preparation of breast feeding should start during antenatal period. Willingness, keenness and confidence in the mother are crucial for successful establishment of breastfeeding. Early breastfeeding in all babies, irrespective of the mode of delivery, and avoidance of prelacteal and prolacteal feeds are essential to establish successful breast feeding.

Breast feeding is instinctive and most mothers adapt to it naturally. However, at the slightest problem encountered, they switch readily over to top feeding. During the first 2-3 days, when lactation is not fully established, the mother is often anxious, that her baby is not getting adequate nourishment. Introduction of bottle feeding would lead to nipple confusion and the baby will refuse breastfeeding because the mechanism of sucking at bottle teat and breast are totally different⁵. Normal healthy newborns do not require any type of prelacteal feeds, as colostrum is sufficient to meet the needs of the newborn baby. The administration of prelacteal feeds interferes with sucking and prolactin production, and ultimately undermines confidence in the mother's ability to breastfeed.

In order to obviate this initial period of 2-3 days when supplementary feed may be required by the newborn, we started advising gentle emptying of breasts daily after 37 completed weeks of gestation. We found that this practice led to increased flow of milk at delivery satisfying both mother and baby leading to the promotion of exclusive breast feeding without any increase in complications.

Methods

One hundred pregnant women at 37 weeks were randomly divided into group of 50 each. The study test group was advised to gently empty the breasts daily at least once at any time of the day preferably during bathing time. The remaining women formed the control group. At the time of delivery, all the mothers were advised to breast feed within half an hour of vaginal

delivery and within 6 hours after cesarean delivery. When the mother was not able to breastfeed or due to nonavailability of breast milk and the child continued to cry, or the pediatrician found the child needs top feed, top feed was given. Before giving top feed, every time the child was put to the breast. The time was noted from initiation to full lactation when no top feed was required. The baby was taken as satisfied if the baby did not cry for minimum 2 hours after breast feeding, and passed urine six or more times in a day. This time the interval was compared between the two groups. Prior breast examination was done at 37 completed weeks in both the groups to rule out or treat cracked or retracted nipples.

Results

Out of the 50 patients in the study group 48 (96%) established full lactation within half an hour of initiation of breast feeding, whereas in the control group only 36 (72%) had established full lactation within half an hour. The difference was statistically significant (P<0.01) (Table 1).

Table 1. Interval between the initiation of lactation and full lactation.

Time interval from initiation of lactation to full lactation	Study group (n=50)	Control group (n=50)	Chi square value	P value
<½ hr	48 (96%)	36 (72%)	10.78095	<0.01
½ to 72 hrs	2 (4%)	13 (26%)		
>72 hrs	0 (0%)	1 (2%)		

In the control group, one patient (2%) had partial lactation failure i.e. even 7 days after delivery top feed was required by the baby in addition to breast feed. Thirteen (26%) women established full lactation between half and hour and 72 hours after initiation of lactation whereas in the study group 2 (4%) women established full lactation between half and hour and 72 hours after the initiation of breast feeding.

Table 2 shows the time interval from initiation of lactation to full lactation in vaginal and cesarean deliveries. Statistically significantly more women established full lactation within half an hour after vaginal delivery than after cesarean delivery in both the groups (P<0.01 in the study group P=0.025 is the control group).

Table 2. Mode of delivery and lactation.

Time interval from initiation of lactation to full lactation	Test group		Chi square	P value	Control group		Chi square	P value
	Vaginal delivery (n=41)	Cesarean delivery (n=9)			Vaginal delivery (n=40)	Cesarean delivery (n=10)		
<½ hour	41 (100%)	7 (77.7%)	9.49074	0.01	32 (80%)	4 (40%)	7.58547	0.025
½ to 72 hours	0	2 (22.2%)			7 (17.5%)	6 (60%)		
>72 hours	0	0			1 (2.5%)	0		

Table 2 shows time interval from initiation of lactation to full lactation in vaginal and cesarean deliveries. Significantly more women established full lactation within half an hour after vaginal delivery than after cesarean delivery in both the groups (P<0.01 in the study group p≤0.025 in the control group).

Table 3.

Time interval from initiation of lactation to full lactation	Test group vaginal delivery (n=41)	Control group vaginal delivery (n=40)	Chi square value	P value
<½ hours	41 (100%)	32 (80%)	9.09863	≤0.025
½ to 72 hours	0 7 (17.5%)			
>72 hours	0 1 (2.5%)			

Table 3 shows time interval from initiation of lactation to full lactation in test group and control group in vaginal deliveries. The results for above were analyzed statistically with chi square test and significant difference was found between two sub group at the value of p≤0.025.

Table 4.

Time interval from initiation of lactation to full lactation	Test group LSCS (n=9)	Control group LSCS (n=10)	Chi square value	P value
<½ hours	7 (77.7%)	4 (40%)	2.77323	≤0.1
½ to 72 hours	2 (22.2%)	6 (60%)		
>72 hours	0	0		

Table 4 shows time interval from initiation of lactation to full lactation in the test group and control group in LSCS deliveries. The results for above were analyzed statistically with chi square test and no significant difference was found between two sub groups at the value of p≤0.1

Discussion

Mother's milk is the universally acknowledged ideal and complete food for her baby. The milk is produced as a result of the interaction between hormones and reflexes. Prolactin, a hormone produced by anterior pituitary stimulates the glandular tissue of the breast to produce milk. When the baby sucks, the nerve endings in the nipple carry message to the anterior pituitary, which in turn releases prolactin in the blood. The more the baby sucks, greater is the stimulus for milk production by release of prolactin. The release or ejection of milk is facilitated by the let down reflex, which is mediated through release of oxytocin from the posterior pituitary. Oxytocin is released in response to stimulation of the nerve endings in the nipple by sucking as well as by thought, sight, smell or sound of the baby. It is responsible for the contraction of myoepithelium around the glands leading to ejection of milk from the glands into the lacteal sinuses and the lacteal ducts. Effective attachment and emptying of breast during each feeding is associated with enhanced milk production.

From the second trimester, colostrum is present in the milk glands and can be expressed. Expression of milk antenatally manually prepares the mother psychologically and the breasts and nipples mechanically for breast feeding. It accustoms the gland cells to milk production, opens milk ducts and facilitates the onset of lactation.

It has been postulated that antenatal nipple stimulation may initiate premature uterine contractions leading to premature labor and loss of colostrum may lead to newborn being increasingly prone to infections. As this study involved subjects after 37 completed weeks of gestation, there was no risk for preterm labor. Moreover

with increasing first hand experience among health professionals, many well respected sources are asserting that even breast feeding is safe in healthy pregnancies ⁶.

We found that antenatal milk expression at term pregnancy leads to significant reduction in the time period for establishment of full lactation in most of the vaginal deliveries thus reducing the chances of breast feeding failure.

Conclusion

Antenatal milk expression after 37 weeks helps establish breast feeding quickly and efficiently.

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