

Original article:

Effect of antenatal stimulation of breast and breast milk outcome: Cross sectional study

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Abstract:

Introduction: Breast stimulation has been suggested as an effective means of inducing labour. It is both an inexpensive and non-medical intervention which allows women greater control over the induction process. The present study is carried out to evaluate the effect of this simple, inexpensive technique of antenatal nipple stimulation after 37 weeks of gestation and its effect on milk outcome.

Methodology : All women with 37 completed weeks of gestation and sure of their last menstrual periods were included in the study group. Patient was taught the maneuver; breast was stimulated/massaged, with palmer surface of the hand, between the index and fore fingers for about 5 minutes in downward direction.

Results : In case group of 94% of patients had initiation of breast milk feeding/secretions within half an hour after delivery, where as in control group 84% of patients had breast milk feeding/secretions within half an hour after delivery. Initiation of breast milk feeding/secretions within half an hour after delivery was studied irrespective of vaginal delivery, forceps, LSCS or NICU admission of the baby.

Conclusion: The present study outlines the importance of breast milk outcome positive response to breast stimulation exercise during prenatal period.

Keywords : Breast stimulation , milk outcome

INTRODUCTION

Labour is a process through which the fetus moves from the intrauterine to the extra uterine environment. It is a clinical diagnosis defined as the initiation and perpetuation of uterine contractions with the goal of producing progressive cervical effacement and dilatation. The exact mechanisms responsible for this process are currently not well understood. Induction of labour refers to the process where by uterine contractions are initiated by medical

or surgical means before the onset of spontaneous labour. The appropriate and timely intervention is base upon accurate identification of fetus at risk. Induction is indicated when the benefits to either mother or fetus out way those of continuing the pregnancy.¹

Breast stimulation has been suggested as an effective means of inducing labour. It is both an inexpensive and non-medical intervention which allows women greater control over the

induction process. It is also indeed a very simple procedure that can be practiced even by uneducated class of women without any difficulty. Breast massage and nipple stimulation have been shown to facilitate the release of oxytocin from the posterior pituitary gland. The most commonly prescribed technique involves gently massaging the breast or applying warm compresses to the breasts for one hour, three times a day. 2

Human milk is the preferred feeding for all infants, including premature and sick newborns. With rare exceptions. Benefits of breast feeding extend to mothers by improving post partum recovery, partial birth control and reduced risk of ovarian and breast cancers. For successful implementation, breast feeding should be encouraged and supported prenatally, perinatally and postnatally. Early breast feeding in all babies, irrespective of the mode of delivery and avoidance of prelacteal and pro lacteal feeds are essential to establish successful breast feeding. The motivation and preparation of breast should start during antenatal period. Willingness, keenness, knowledge and confidence in mother are crucial for successful establishment of breast feeding. During the first few 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 breast feeding because the mechanism of sucking at bottle teat and breast are totally different. 3The administration of prelacteal feeds interferes with sucking and prolactin production and ultimately undermines the confidence in mother's ability to breastfeed. The present study is carried out to

evaluate the effect of this simple, inexpensive technique of antenatal nipple stimulation after 37 weeks of gestation and its effect on milk outcome.

MATERIALS AND METHODS

The present cross sectional study was carried out prospectively in ANC OPD of Government General Hospital.

METHODOLOGY OF DATA

COLLECTION

- Written and informed consent of the patient was taken
- A prospective study was carried out on 200 booked patients at term.
- Prior examination was done to exclude any inverted or cracked nipple and appropriate treatment was instituted.
- Daily stimulation of breast (nipple), 3 times a day (anytime of the day) preferably during bathing after 37 weeks of pregnancy was introduced in randomly selected 100 pregnant women (case group)
- The remaining 100 women formed the control group where stimulation of breast (nipple) was not being done.
- In the above two groups effects of stimulation of breast and its outcome on labour was studied.
- Comparative study was done in both the groups
- The above mentioned case and control groups participants were followed up in post natal period and effects of breast, stimulation on breast milk initiation/feeding were analyzed.
- Statistically data was interpreted to suggested relevant recommendation.

INCLUSION CRITERIA

All women with 37 completed weeks of gestation and sure of their last menstrual periods were included in the study group.

Gestational age was determined by the best obstetric estimate of date of confinement, with the use of a reliable menstrual history (normal, predictable, cyclic, spontaneous menses), no recent use of oral contraceptives, an early pregnancy test, an early vaginal estimation of uterine size, fetal heart auscultation at 20 weeks, and obstetric sonograms.

EXCLUSION CRITERIA

- Mothers with less than 37 weeks of gestation.
- Low Amniotic Fluid Index.
- Mothers with fetus showing intra uterine growth restriction
- Mothers with pregnancy induced hypertension.
- Mother with congenital anomaly babies.
- Mother with previous LSCS or any other surgery on uterus,
- Any other high risk pregnancy.

METHODS:

The selected patients from cases were taught the following maneuver

- Detailed history was taken and thorough clinical examination was performed.
- Patient was taught the maneuver; breast was stimulated/massaged, with palmer surface of the hand, between

the index and fore fingers for about 5 minutes in downward direction.

- The patient was then asked to rest for 3-4 minutes.
- Above mentioned procedure was repeated 3 times a day.
- This maneuver had to be followed by the patient after 37 weeks of pregnancy without any risk factor,
- This was repeated till 40 weeks of gestation
- Patient was admitted in the ward, at the completion of 40 weeks of gestation (by date or by scan).
- Patient was kept under observation from 40 to 41 weeks of gestation.
- During this period, patient was evaluated in terms of amount of liquor, baby weight, NST, biophysical profile..
- If any of the above mention parameters were found abnormal, the patient was subjected to induction of labour or lower segment cesarean section.
- Otherwise, the pregnancy was continued till 41 weeks of gestation and breast stimulation was continued.
- If the patient failed to progress in to spontaneous lab our by the end of 41 weeks of gestation, then patient was subjected to induction with medical or surgical methods.

OBSERVATIONS AND RESULTS

TABLE 1 : INITIATION OF BREAST MILK FEEDING/SECRETION WITHIN HALF AN HOUR AFTER BIRTH.

SR. NO.		CLASS (n=100)	CONTROL (n=100)	Chi Square Df=1	P
1	Initiation of breast milk feeding/secretion within half an hour after birth.	94	84	4.137	0.042 Not Significant

In case group of 94% of patients had initiation of breast milk feeding/secretions within half an hour after delivery, where as in control group 84% of patients had breast milk feeding/secretions within half an hour after delivery. Initiation of breast milk feeding/secretions within half an hour after delivery was studied irrespective of vaginal delivery, forceps, LSCS or NICU admission of the baby.

Discussion:

Breast stimulation has been suggested as an effective means of inducing labour. It is both an inexpensive and non-medical intervention which allows women greater control over the induction process. It is not clear how breast stimulation increases uterine contractions; however it has been shown to be effective for contraction stress tests and for the augmentation of labour. Breast massage and nipple stimulation have been shown to facilitate the release of oxytocin from the posterior pituitary gland. The most commonly prescribed technique involves gently massaging the breast or applying warm compresses to the breasts for one hour, three times a day. Oxytocin is released, and studies

have demonstrated an abnormal fetal heart rate (FHR) tracing similar to that occurring in oxytocin challenge testing in higher-risk pregnancies. This abnormal rate may be caused by a reduction in placental perfusion and fetal hypoxia. It has been suggested that nipple stimulation causes release of endogenous oxytocin causing uterine contractions. Nipple stimulation in addition to producing uterine contractions also causes improvement in Bishop's score which helps in successful induction of labour by making the cervix favorable. Nipple stimulation can also be used for augmentation of uterine activity in case of hypotonic uterine action. Breast stimulation as a means of labour induction allows women greater control over the induction process and has the advantage of being a natural and inexpensive non-medical methods.^{4,5}

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. The present study also deals with the effect of antenatal nipple stimulation after 37 weeks of gestation on initiation of breast feeding after delivery. This study was conducted at Sassoon

General Hospital in which 100 cases were included as per the inclusion criteria and in whom antenatal breast stimulation was advised. Gestational age was determined by the best obstetric estimate of date of confinement, with the use of a reliable menstrual history (normal, predictable, cyclic, spontaneous menses), no recent use of oral contraceptives, an early pregnancy test, an early vaginal estimation of uterine size, fetal heart auscultation at 20 weeks, and obstetric sonograms. In control group of 100 patients no intervention was done.

In the study conducted by Adewole et. Al. 1993a and 1993b, experimental group was subjected to unilateral self breast stimulation 1 hour per day for 3 days and there was no intervention in the control group. In the study conducted by Chayen 1986 in experimental group induction of labour using an electric breast pump, (250 Hg of negative pressure) alternating every 15 minutes from left to right nipple and in control group oxytocin infusion was done.⁶

In the study conducted by Damania 1992 there were three study groups of which

Group 1 was subjected to Self breast stimulation for 1 hour per day, for 3 day, alternating breast every 10 minutes in Group 2 IV Oxytocin infusion was done and in Group 3 no intervention was done.⁷As shown in observation table no. in case group 94% of patients had initiation of breast milk feeding/secretions within half an hour after delivery, where as in control group 84% of patients had breast milk feeding./secretions within half an hour after delivery. Initiation of breast milk feeding/secretions within half an hour after delivery was studied irrespective of vaginal delivery, forceps, LSCS or NICU admission of the baby.As $p < 0.05$ ($p = 0.042$) the initiation of breast milk feeding secretion within half an hour after birth was significantly higher, in case group in which antenatal breast stimulation was done as compared to control group in which no intervention was done. In the similar study conducted by Singh Gurmeetsh et. Al. 2009, for antenatal breast stimulation and its effect on initiation of lactation and lactational performance following observations were noted. ⁷

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

As $p < 0.05$ the number of patients in having establishment of full lactation within half an hour after initiation of lactation, was significantly higher in patients in case group in which antenatal breast stimulation was performed as compared to the patients in

control group in which no intervention was done.

Conclusion: The present study outlines the importance of breast milk outcome positive response to breast stimulation exercise during prenatal period.

REFERENCES:

- 1 Curtis 1999 curtis P. Breast stimulation to augment labour, history mystery and culture. Birth 1999; 26(2):123-6.
- 2 Kavanagh J, Kelly AJ, Thomas J. Breast stimulation for cervical ripening and induction of labour. Cochrane Database Syst Rev. 2005 Jul 20;(3):CD003392.
- 3 Copel JA Copel JA, Otis CS, Stewart E, Rosetti C, Weiner S. (1985) Contraction stress testing with nipple stimulation. J Reprod Med. 1985, June; 30(6): 465-71
- 4 M. Modares, JF Flaherty (2000). The use of breast stimulation to prevent postdate pregnancy m. modarres and f. rahimi-klan Medical Journal of the Islamic Republic of Iran Volume 14 Number 3 Fall 1379 November 2000
- 5 Elliott 1984a Elliot MD, Flaherty JF. The use of breast stimulation to prevent postdate pregnancy. American Journal of Obstetrics and Gynecology 1984;149:628-32.
- 6 Adewole 1993a Adewole IF, Franklin O, Matyiluko AA. Cervical ripening and induction of labour by breast stimulation. African Journal of Medicine and Medical Science 1993;22:81-6.
- 7 Damania 1992, Damania KK, Natu U, Mhatre PN, Mataliya M, Mehat AC, Dattary SN. (Evaluation of two methods employed for cervical ripening), Journal of Postgraduate Medicine 1992; 38(2): 58-9.

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