Effect of Lanoline Oil versus Expressed Breast Milk on Nipple Sore of Breast Feeding Women

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Abstract: Objective: Excruciating nipple sore is a bothersome problem for breastfeeding women. This study was conducted to compare the effect of lanoline oil and expressed breast milk on treatment of nipple sore in breastfeeding women. **Materials and Methods:** This Quasi-experimental clinical trial was conducted on 140 women who visited Sohage University hospital at Sohage city, Egypt from of January 2017 to end of June 2017during their postpartum period. Subjects were randomly divided into two equal groups of 70 women grouped as lanoline oil group and breast milk. Severity of nipple sore scale and visual analog scale (VAS) were used to measure the intensity of pain. **Results:** The results showed that the two groups were matched in terms of demographic and obstetric characteristics. Duration of cure from breast sore with lanoline oil was 1-3day by percent 58.6% compared to 45.7% in expressed breast milk group. Also 32.9% in lanoline oil group cure within 4-5 day compared to 24.3%. in expressed breast milk group. As regard pain assessment 8.5% of women in lanoline oil group suffer from severe pain compared to 17.9% of in expressed breast milk group difference between the two groups (p=0.056). **Conclusion:** The present study showed that lanoline oil was more effective than breast milk in healing and controlling nipple sore.

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Key word: - Nipple sore, lanoline oil, expressed breast milk

1. Introduction

Breast-Feeding is the best way for feeding and growth in the first 6 months of birth. The benefits of breastfeeding for mothers and newborns have been well documented. Breast milk not only reduces the risk of occurrence of many acute and chronic diseases such as diarrhea and respiratory infections in breast-fed infants, but also it has numerous benefits to mothers as reduction the risk of breast cancer, uterus cancer, ovarian cancer and osteoporosis. (1)

In the other hand breast feeding also associated with possible problems arising during the breastfeeding period, those occurring in the early days of breastfeeding are most important including nipples and areola lesions. These lesions may appear as eroded skin, wounds, and fissure as well as clinical signs of erythema, edema, white or yellow blisters, dark spots, and ecchymosis. (2 & 3) It is reported that 80 to 90 percent of breastfeeding women experience some nipple hurt and up to one-third of women who experience these symptoms may have stopped breastfeeding within the first six postnatal weeks. (6, 7)

In the earliest weeks of breastfeeding, the occurrence of nipple trauma is 15.9% to 62.9% and the incidence of nipple pain is 36% to 79%. Because of the pain caused by nipple trauma, women may feel insecure about breastfeeding during the early postpartum period which can lead to overall dissatisfaction and early weaning. (9)

Subsequently of the pain caused by nipple trauma, mothers may feel insecure about breastfeeding during the early postnatal period which can lead to overall dissatisfaction and early weaning. (8) Because of the repeated sucking by the infant, infections caused by the entrance of microorganisms through the nipple fissure, and constant exposure of nipple skin with the infant's oral flora treatment of traumatic nipple is complicated issue. (5)

Sore nipple associated with breast-feeding is a common problem, with an incidence ranging from 11% to 96%, and may lead to premature weaning. This frequently occurs from suction trauma to the nipple secondary to incorrect positioning at the breast, poor latching or tongue thrusting may result in soreness on the top or tip of the nipple, poor timing may delay breast feedings so that the mother hurries latching before the infant is ready. Also ineffective hand positioning may also result in soreness on the underside of the nipple, engorged breast, flat or inverted nipples, incorrect or excessive use of breast pumps, detergent residue on bra or clothing, extremely sensitive nipples. (11.12). In addition, traumatized nipples can readily become super infected with bacteria or yeast, candidiasis, mastitis, or other infections. The presence of which can delay healing, even when positioning and latch-on are corrected.

Unfortunately, many women delay seeking treatment until substantial damage already has occurred. Thus, effective wound healing, in addition to

the teaching of proper techniques, must occur before painless breast-feeding can resume. Sore nipples are a common complaint of breastfeeding mothers and rank in the top two or three reasons why mothers terminate breast feeding early in the lactation experience. (13)

Breast milk is a natural treatment that stimulates wound healing, but over an extended period of time. Milk contains bioactive elements that work as antimicrobial and anti-inflammatory mechanisms to stimulate and modulate the development of immune function and the growth and development of lactating tissues (10).

Lanolin is considered an emollient, which softens the skin by assisting rehydration and preventing dehydration. The emollient mechanisms of lanolin include its occlusive and humectant properties. Lanolin provides a layer of oil on the skin that slows the loss of water by evaporation and maintains moisture of the stratum. Additionally, because lanolin is semi-occlusive, it allows for the retention of water without the occurrence of water logging or maceration of the skin. (24)

The treatment of nipple trauma may help to encourage exclusive breastfeeding. Despite the variety of interventions used in the treatment and prevention of nipple trauma, limited studies have compared the effect of lanolin versus breast milk in treatment of breast sore.

The nurse has important role in prevention and management of breast sore as many women lack the understanding breast care. In addition, interventions to manage breast sore are sometimes not an emphasis in prenatal education, to avoid discouraging mothers from breastfeeding. However, this gap in mothers' knowledge endangers continued breastfeeding. In addition, mothers who are at risk for severe pain during breastfeeding, such as women with preexisting chronic pain conditions, may need additional consultation and support for breastfeeding pain management.

Significance of the problem

Nurse-midwife can play an important role in early detection and proper management of breast sore to maintain women health and enhance successful breastfeeding. It is estimated that 80% to 90% of breastfeeding women experience mild nipple sore. If these sore remain untreated, 26% of nipple pains will develop into nipple fissure and severe pain. Traumatic nipples occurrence varies between 29% and 76%. While nipple pain caused from breastfeeding varies between 34% and 96%. (4) Few studies have been carried out to study the treatments of traumatic nipples. Because of a lack of effective treatment and opposing results about lanolin, we decided to compare the effect of lanolin oil and expressed breast milk on nipple soreness treatment. A study that compare the effect of lanolin oil and expressed breast milk on nipple soreness treatment can contribute to provide evidence for introducing this intervention in clinical practice.

Aim of the study

To compared the effect of lanolin oil and expressed breast milk on nipple soreness treatment.

Research hypothesis

Expressed breast milk is more effective than lanoline oil in treatment of breast soreness.

2. Subject and methods

Research design

A Quasi-experimental research design was adopted in this research. The most frequently used quasi-experimental design involves an experimental treatment and two groups of subjects observed before and after its implementation.

Setting

The study carried out at postnatal ward and outpatient clinic at Sohage university hospital, Sohage Governorate, Egypt.

Sample

A Purposive sample of 140 postnatal women who delivered two days ago and complain of breast score and were recruited after their acceptance to participate in the study. They were randomly assigned into two groups (70 for each). The first 70 subjects became lanoline oil group, the next 70 subjects were included in expressed breast milk group. The postnatal women were enrolled based on the inclusion criteria. Informed consent was then obtained from them to participate in the study.

Inclusion criteria:

Postnatal mothers within 5 days of a post-natal period with the complaints of breast sore. Don't use any medication to relieve it. Have healthy infants free from medical or congenital anomalies & genetic disease. And accept to participate in the study.

The sample size has been determined based on rule of the sum and sample equation based on information from relevant studies and the daily numbers of admission into postnatal unit throughout the period of data collection. With the power of test 80% and confidence interval 95% using EPI-Info package the sample size is calculated to be 140 women.

Tools for data collection: three tools developed and filled by the researcher to collect data:

1) Maternal structured interviewing questionnaire: This tool was developed and used by the researcher after extensive literature review and it includes two parts: the first part contained questions related to socio-demographic characteristics, medical history, past and present obstetric history.

2) Breast feeding assessment:-onset of breast feeding, baby position during breast feeding, use of antiseptic solution before breast feeding, training about breast feeding before delivery, use formula with breast feeding, time of onset of complain, symptoms reported by women, use of moisture before delivery for dry nipple.

3) Physical examination, including erythema, edema, crust, ecchymosis, peeling, blisters, and exudate. Description of Nipple Score adapted from **Abou-Dakn & Fluhr 2011(15)** Was used to assess nipples trauma. These characteristics were quantified on individual 5-point scales that rated the severity of the characteristics. The scale values range from 0 to 5. Scoring scale of breast sore done according to the following scale:-0=There is no visible change on the surface of the skin 1=redness2=A superficial effect of the skin with the formation of crusts on the outer surface represents less than 25% of the breast nipple3= The superficial effect of skin with the formation of crusts on the outer surface represents more than 25% of breast nipple. 4=A wound in the thick layer of the skin represents less than 25% of breast nipple. 5= A wound in the thick layer of the skin represents more than 25% of breast nipple.

4) Visual analogue scale was used to assess women's degree of pain after one and two weeks of application of either lanoline oil or expressed breast milk. The scale used in this study ranged from 1 to 10 with the following descriptors:

Nipple pain scores 0(No pain, just the heaving feeling when baby moving breast nipple)1-4 (Mild) 5-7 (Moderate) 8-10 (Severe). **Abou-Dakn, M., et al 2011(5).**

Reliability and validity of the tool:

The tools designed by the researcher and revised by experts in the field of community and maternity health nursing to content validity. Regarding maternal structured interviewing questionnaire, modifications were carried out according to the panel judgment on clarity of the sentences and appropriateness of the content. Reliability test was assessed by applying the crombacalfa.

Pilot study

A total of 10% of the sample were included in the pilot study recruited from postnatal ward and outpatient clinic in order to assess the feasibility and clarity of the tools and determine the needed time to answer the questions. The postnatal women informed about the aim of the study before the intervention. Pilot study revealed that, the average length of time needed to complete the maternal structured interview schedule; it was approximately 30 minutes with each postnatal woman. Based on its result changes were carried out. Sample included in the pilot study were excluded from the study sample.

Field of the work

Before conducting the study a written permission from the institutional authority of maternity hospital was obtained. After that, the researcher was introduced herself to postnatal women who were participated in the study and met the inclusion criteria and inform them about the purpose of this research in order to be obtain their written acceptance to recruited in this research acceptance of the women. In order to gain their cooperation. The researcher was constructed and prepared of the different data collection tools. Data collection was carried out through three phases: interviewing and assessment phase, implementation phase, and evaluation phase.

Interviewing and assessment phase:

In this phase, data collected over a period of 6 months from beginning of January 2017 to end of June 2017 in the postnatal ward and out patient's clinic three days per week. The postnatal women were enrolled based on the inclusion criteria. This interview and assessment phase consumed about 30 minutes for each woman to complete interview questionnaire. The postnatal women were asked in Arabic language and documented her answer in the tools utilized.

Implementation phase:

In this phase, the selected women were randomly assigned into two groups (70 women for each). The first group comprised of 70 postnatal who were encouraged by assistance of in duty physician to administer lanoline oil twice daily for treatment of breast sore. The next group comprised of 70 women who were encouraged to administer expressed breast milk for treatment of breast sore.

Evaluation phase:

In this phase, after one and two weeks all postnatal women recruited in the study were evaluated for the levels of breast sore, pain and duration of healing of breast sore by home visit or in outpatient clinic.

Administrative and ethical considerations:

An official permission was obtained using prosper channels of communication. This was done through letters addressed from the Dean of the Faculty of Nursing, Sohage University explaining the aim and procedures of the study and asking for cooperation. The women were informed about the study purpose and procedures and invited them to participate. A verbal consent was obtained by each participant who was informed about the rights to withdraw at any time without giving any reason and with no consequences. Data were considered confidential and not be used outside this study.

Statistical analysis:

All data were collected, tabulated and statistically analyzed using SPSS 20.0 for windows (SPSS Inc., Chicago, IL, USA). Quantitative data were

expressed as the mean ± SD & median (range), and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). Independent samples Student's t-test was used to compare between two groups of normally distributed variables. Percent of categorical variables were compared using Chi-square test or Chi-square test of trend or Fisher's exact test when appropriate. All tests were two sided. p-value< 0.05 was considered statistically significant (S)and p-value ≥ 0.05 was considered statistically insignificant (NS).

3. Results

The study sample included 140 postnatal women divided into two groups with the mean age of the sample was 30.7±7.3 years old for lanoline oil group and26.9±7.7 breast milk group. More than half of the sample 55.7 % of lanoline group and 70% of breast milk group were from rural areas. Also around half of women in both group were secondary or university educated (57.7 % for lanoline group and 47.1% in breast milk group. This table shows that there is statistically insignificant difference between both groups as regard, age, residence, income, marital status and body mass index (BMI) P>0.05.

Table (1): Socio- demographic characteristics of studied groups

Variables	Lanoline group (No=70)	Breast milk group (No= 70)	χ^2	p- value
Age group 20-≤30 30-40 Age (years) $\bar{X}$ ±SD Range	 49(70) 21(30) 30.7±7.3 18-43	 51(72.9) 19(27.1) 26.9±7.7 18-40	1.4	0.7
Residence Rural Urban	 39(55.7) 31(44.3)	 49(70) 21(30)	3.1	0.08
Education Illiterate Basic Secondary University	 14(20) 16(22.9) 18(25.7) 22(31.4)	 21(30) 16(22.9) 15(21.4) 18(25.7)	1.7	#0.2
Income Inadequate Adequate Adequate & more	 14(20) 43(61.4) 13(18.6)	 8(11.4) 44(62.9) 18(25.7)	2.4	#0.13
Marital status Married Divorced	 59(84.3)) 11(15.7)	 64(91.4) 6(8.6)	1.67	0.19
BMI (kg/m²) $\bar{X}$ ±SD Range	 26.4±4.1 19.4-35.6	 25.8±2.9 19.6-31	t=1.08	0.28(NS)

chi square of trend t= t test Ns= insignificant

Table (2): Obstetric history of studied groups

Variables	Lanoline group (No=70) No (%)	Breast milk group (No= 70) No (%)	χ^2	p- value
Parity Pimipara Multipara	 19(27.1) 51(72.9)	 15(21.4) 55(78.6)	1.8	0.17(NS)
Mode of delivery Normal vaginal delivery CS	 20(28.6) 50(71.4)	 36(51.4) 34(48.6)	7.6	0.006(S)
Place of delivery Home Hospital	6(8.6) 64(91.4)	8(11.4) 62(88.6)	0.32	0.57(NS)

S=significant NS=insignificant

This table shows that there is statistically unsignificant difference between both groups as regard, number of parity P<0.05. But statistically significant difference between both groups regarding mode of delivery P>0.05. As 71.4% of women in lanoline group delivered by cesarean section compared to 48.6% in breast milk group.

Table (3): Distribution of the studied groups regarding breast feeding history

breast feeding history	Lanoline group (No=70) No (%)	Breast milk group (No= 70) No (%)	χ^2	p- value
Onset of breast feeding Less than one half of hour Two hours and more Second day after delivery	 4(5.7) 47(67.1) 19(27.1)	 5(7.1) 65(92.9) 0(0.0)	#14.5	0.0001(S)
Baby position during breast feeding Correct Incorrect	46(65.7) 24(34.3)	41(58.6) 29(14.4)	0.76	0.38(NS)
Use antiseptic solution before breast feeding Yes No	34(48.6) 36(51.4)	30(42.9) 40(57.1)	0.46	0.49(NS)
Training about breast feeding before delivery Yes No	33(47.1) 37(52.9)	32(45.7) 38(54.3)	0.02	0.86(NS)
Artificial feeding with breast feeding Yes No	45(64.3) 25(35.7)	22(31.4) 48(68.6)	15	0.0001(S)
Uses cream for drying of nipple before labor Yes No	37(52.9) 33(47.1)	33(47.1) 37(52.9)	0.45	0.49(NS)

#Chi square of trend S=significant NS=insignificant

Regarding breast feeding history, this table reveals that there is statistically significant difference between both groups as regard onset of breast feeding and use of artificial feeding with breast feeding P<0.05. 27.1 % women in lanoline oil group start breast feeding in second day compared to 0.0% in breast milk group also 64.3% of women in lanoline oil group use artificial feeding with breast normal feeding compared to 31.1% in breast milk group. As regard baby position, use of antiseptic solution, training of breast feeding and use of cream for dry nipple. before

delivery there were a statistically insignificance difference observed between the two study sample.

Table (4): Nipple sore scale and duration of cure among women in the two studied groups.

Variables	Lanoline group (70) No (%)			Breast milk group (70) No (%)			χ 2 of trend	p- value
	Pre	1st week	2nd week	Pre	1st week	2nd week		
Nipple sore scale 0 1 2 3 4 5	 0(0.0) 29(41.4) 10(14.3) 15(21.3) 12(17.1) 4(5.7)	 35(50.0) 15(21.4) 7(10.1) 6(8.5) 4(5.7) 3(4.3)	 61(87.1) 2(2.8) 3(4.5) 2(2.8) 1(1.4) 1(1.4)	 0(0.0) 28(40) 15(21.4) 3(4.3) 23(32.9) 1(1.4)	 30(48.2) 20(28.5) 12(17.1) 0(0.0) 7(10.1) 1(1.4)	 50(71.5) 10(14.4) 5(7.1) 0(0.0) 5(7.1) 0(0.0)	4.2	0.04(S)
Cure period / day 1-3 day 4-5 day 6-7 day >7 day	 41(58.6) 23(32.9) 5(7.1) 1(1.4)			 32(45.7) 17(24.3) 21(30) 0			5.9	0.015(S)

This table 6 shows that redness followed by itching is the signs reported by women (28.6% & 24.3% respectively) in lanoline group and (37.1% & 11.4% respectively) in breast milk group.

Concerning nipple sore scale nearly half women in both group shows grade 1 of sore scale (41.4% in lanoline group and 40% in breast milk group).But there is statistically significant difference between both groups P<0.05.21.3% of women lanoline group were in grade 3 compared to 4.3% in breast milk group.

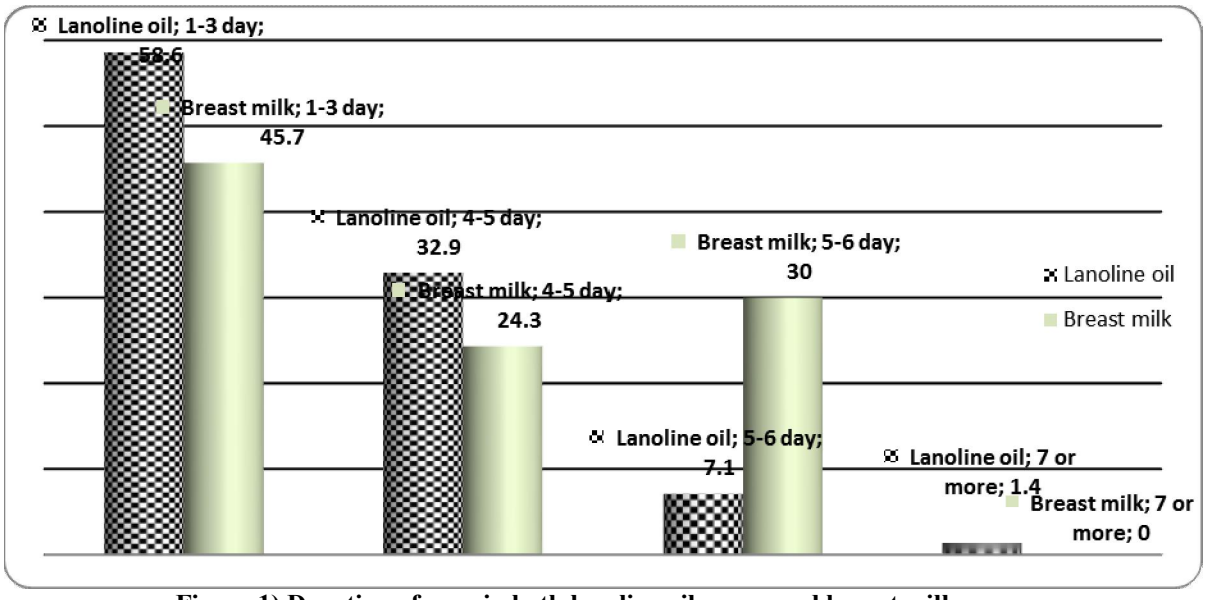

Figure 1) Duration of cure in both lanoline oil group and breast milk group

Figure 1 illustrates that there is statistically significant difference between both groups P<0.05. Lanoline group shows 58.6% cure at 1-3 days compared with breast milk cure is 45.7%.

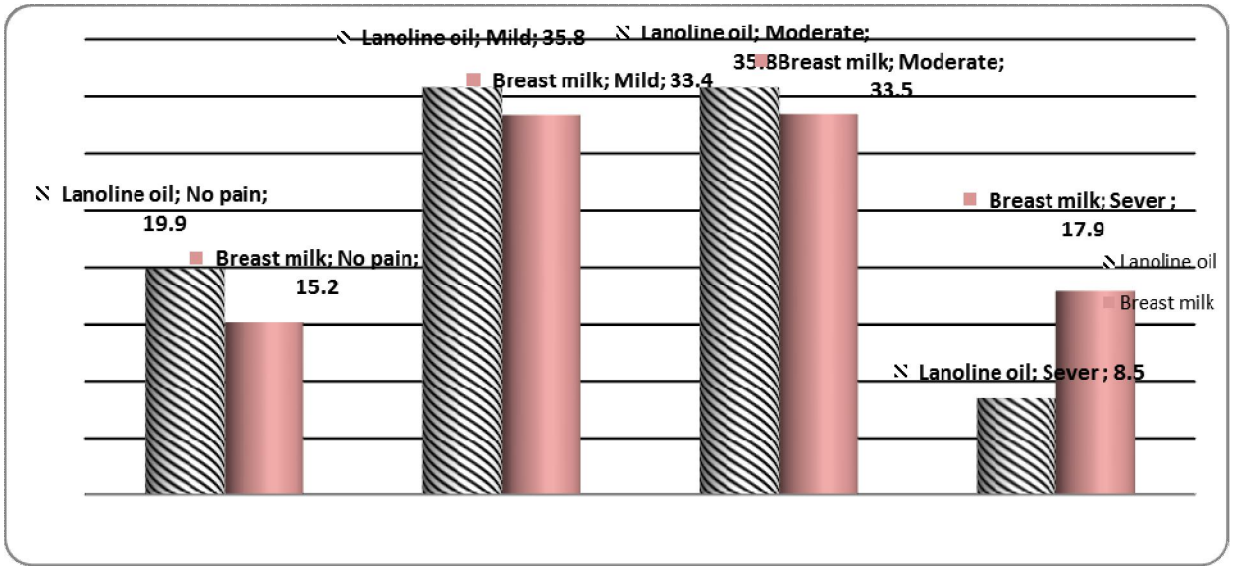

Figure 2) Degree of nipple pain experience by the women in both lanoline oil group and breast milk group after one weeks

Figure 2 illustrates that there is statistically significant difference between both groups P<0.05. 8.5% of women in lanoline group experience sever pain after application of lanoline compared to 17.9% in breast milk group.

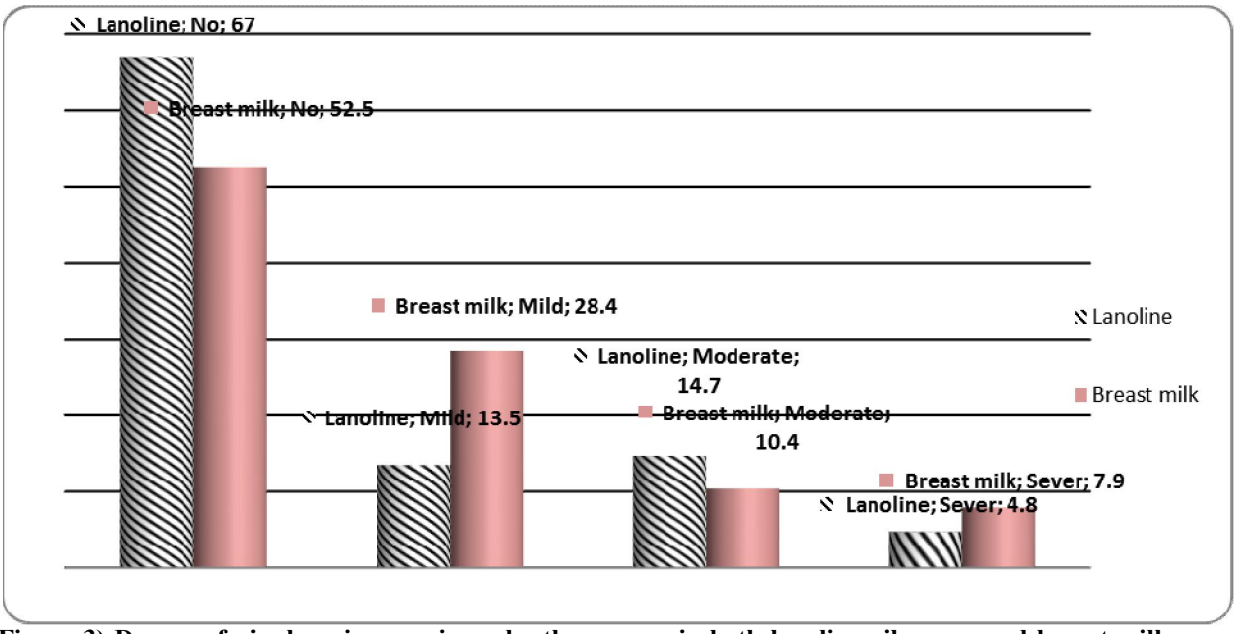

Figure 3) Degree of nipple pain experience by the women in both lanoline oil group and breast milk group after two weeks.

Figure 3 illustrated that there is statistically significant difference between both groups P<0.05. 67% of women in lanoline group reported no pain during the second week of application of lanoline compared to 52.5% in breast milk group.

Table (5): Relation between "mode of delivery, artificial feeding and onset of start of breast feeding" and duration of cure of breast sore.

Items	Duration of cure of breast sore				χ 2of trend	P
	1-<3days	3-<5days	5-7 days	>7days		
	No (%)	No (%)	No (%)	No (%)		
Normal vaginal delivery						
Lanoline group (20)	12(60)	6(30)	2(10)		9.1	0.003
Breast milk group (36)	10(27.8)	16(44.4)	10(27.8)			
CS						
Lanoline group (50)	29(58)	17(34)	3(6)	1(2)	15.4	0.0001
Breast milk group (34)	22(64.7)	1(2.9)	11(32.4)	0		
Use of artificial feeding						
Lanoline group (45)	27(60)	15(33.3)	3(6.7)		0.004	0.9
Breast milk group (22)	17(77.3)	0	5(22.7)			
Artificial feeding no						
Lanoline group (25)	14(56)	8(32)	2(8)	1(4)	4.2	0.04
Breast milk group (48)	15(31.3)	17(35.4)	16(33.3)	0		
Onset of breast feeding after labor						
Less than one half of hours	4(100)		0		f	0.008
Lanoline group (4)	0		5(100)			
Breast milk group (5)						
After two hours	30(63.8)	13(27.7)	3(6.4)	1(2.1)	3.5	0.06
Lanoline group (47)	32(49.2)	17(26.2)	16(24.6)	0		
Breast milk group (65)						
After 2 days	7(36.8)	10(52.6)	2(10.5)			
Lanoline group (19)						

Investigation mode of delivery and it's relation with duration of cure in both group in cases of normal vaginal delivery there were 90% of women in lanoline group cure within 1-<3 days and 3-<5 days compared to 72.2 in breast milk group. Also in CS 92.2% in lanoline group within 1-<3 days and 3-<5 days compared to 66.6% in breast milk group and the difference observed was statistically significant.

Regarding use of artificial feeding 88% of women in lanoline group who use artificial feeding cure within 1-<3 days and 3-<5 days compared to 66.7 in breast milk group also the difference observed was statistically significant. A statistically significance difference observed between the two groups regarding onset of breast feeding after labor. 91.5% of women in lanoline group who cure within 1-<3 days and 3-<5 days start breast feeding within 2 hours compared to 75.5% in breast milk group. Also the same table reveals that there are a significant relations between each of mode of delivery, artificial feeding and onset of start of breast feeding" and duration of cure of breast sore.

Investigating relation between scale of breast nipple changes scale and mode of delivery majority of women in lanoline oil group in both normal vaginal delivery70% and cesarean section52.2% were in grade one of nipple changes scale compared to41.7 % and 38.2% in breast milk group the difference observed was statistically significant.

Also the were a statistically insignificant difference observed between onset of breast feeding and degree of breast nipple changes in both groups. As 61.7% and 43.1% women in both lanoline and breast milk groups respectively who start breast feeding within 2 hours shows grade 1 of scale of breast nipple changes also 10.6 % of women in lanoline group and 23.1% in breast milk group show grade2 in the scale. Who start breast feeding after 2 hours. Also the same table reveals that there are a significant relations between each of mode of delivery, artificial feeding and onset of start of breast feeding" and Scale of breast nipple changes.

Table (6): Relation between "mode of delivery, artificial feeding and onset of start of breast feeding "and Scale of breast nipple changes

Items	Scale of breast nipple changes						χ 2	P
	0	1	2	3	4	5		
	No (%)	No (%)	No (%)	No (%)	No (%)	No (%)		
Normal vaginal delivery								
Lanoline (20)	0	14 (70)	0	1(5)	4(20)	1(5)	4.3	0.04(S)
Breast milk (36)	0	15(41.7)	2(5.5)	3(8.3)	15(41.7)	1(2.8)		
CS								
Lanoline (50)	0	26(52)	10(20)	3(6)	8(16)	3(6)	9.3	0.002(S)
Breast milk (34)	0	13(38.2)	13(38.2)	0	8(23.5)	0		
Artificial feeding yes								
Lanoline (45)	0	26(57.8)	6(13.3)	4(8.9)	7(15.6)	2(4.4)	0.2	0.6(NS)
Breast milk (22)	0	11(50)	6(27.3)	0	5(22.7)	0		
Artificial feeding no								
Lanoline (25)	0	15(56)	4(16)	0	5(20)	2(8)	2.4	0.12(NS)
Breast milk (48)	0	17(35.4)	9(18.8)	3(6.3)	18(37.5)	1(2)		
Onset of breast feeding after labor								
*Lanoline (4)	0	3(75)			1(25)		4.9	0.03(S)
Breast milk (5)					5(100)			
**Lanoline (47)	0	29(61.7)	5(10.6)	2(4.3)	9(19.1)	2(4.3)	2.8	0.09(NS)
Breast milk (65)	0	28(43.1)	15(23.1)	3(4.6)	18(27.7)	1(1.5)		
***Lanoline (19)	0	9(42.2)	5(26.3)	2(10.5)	2(10.5)	2(10.5)		

*=Less than one half of hours **= After two hours ***= After 2 days

4. Discussion

Exclusive breastfeeding to six months postnatal. Was commended by health specialists Whereas many women discontinue due to difficulties encountered rather than maternal choice. One common breastfeeding problem is nipples sore. Insistent nipple pain is one of the utmost causes given by mothers for terminating exclusive breastfeeding (16).

Regarding the factors affecting incidence of traumatic nipple, **Storr (2008).** pronounced many factors associated with the target of breastfeeding women. These factors included maternal age, mother's education level, family household income, number of children, mother's knowledge about the benefits of breastfeeding, previous breastfeeding experience, attitude towards. In present study a total of 140 samples enrolled with 70 samples in the lanolin group and 70 samples in the expressed breast milk group. Regarding socio-demographic data Women's age ranged was between 20-40years old. Also the two groups were homogenous concerning mother education income, marital status and BMI. With statistically in significance difference.

Concerning obstetric history of the study subjects, the present study result highlighted a statistically significance difference between the studies groups mode of delivery. Two third of women in lanoline group delivered by cesarean section also when study the relation between mode of delivery and duration of cure of breast sore there is a statistically significance difference observed as CS associated with duration of cure less than 3 days in both group.

However, since there are differences in the design of the studies, diagnostic methods, duration of treatment, and assessment time, it is not possible to make an accurate comparison between topical methods. So, there is a need to conduct a new clinical trial to compare the effect of lanolin and squeeze ointment.

Concerning history of breast feeding the study results showed that onset of breast feeding within two hours and use of artificial feeding with breast feeding associated with occurrence of breast sore with statistically significance difference between the two studied group.

It is worth highlighting that the baby's positioning and attachment to the breast during breastfeeding are fundamental aspects towards the occurrence of different sorts of trauma. So, the most important intervention for reducing its occurrence is

the education of women on correct breastfeeding techniques, starting during pregnancy or immediately during postnatal period.

But a statistically un significance difference observed between the two study group regarding baby position during breast feeding, use of antiseptic solution before breast feeding and use of cream for dry nipple during pregnancy. On the other hand **Ahmed et al 2015** Correct position during breast feeding as there was highly significant difference between pre & post implementation of guideline.

The mothers of current study suffered from different degrees of nipple pain and different grades of trauma. One third of women in both groups reported mild to moderate degree of pain after one week, after two week more than half of women in the two group reported no pain.

In the same line **Ahmed et al 2015**in Egypt who study Evidence Based Guideline Using to Alleviate Traumatic Nipple among Nursing Mothers shows that all mothers suffered from different degrees of nipple pain before intervention, (88%) of mothers suffered from severe nipple pain. Regarding using lanolin for nipple pain that there is significant improvement on the pain were conducted degree between pre and post intervention by 7 & 14 day in time.

The present study illustrated that onset of nipple sore within 1-5 day with mean± SD 2.9±2 and redness and itching was the first complain. Similarly **Ahmed et al. 2015** reported that all women ached from different grades of nipple trauma within 3-5 day before intervention 38% of women suffer from Erythema and/or nipple dryness and scabbing, edema.

Also nearly half of study sample in both groups had first degree of nipple sore and one third of both lanoline and breast milk group had third and fourth degree of nipple sore. In a similar study conducted by **Ahmed et al.2015** one third in both comparative groups had 1st and 2nd degree of nipple trauma.

With testing the effect of evidence based methods as lanoline oil and expressed breast milk on nipple sore. Investigating duration of cure/day of nipple sore, more than half of women in lanoline group cure from nipple sore within 1-3 days and one third of then cured within 4-5 day compared to 45.7% and 24.3 % in expressed breast milk group. Also pain experience by women with lanoline oil is less than that with breast milk. So that lanoline oil is more effective than breast milk for nipple sore treatment. **As'adi et al 2017** in similar study reported that healing rate in lanolin-treated subjects seems to be lower in comparison to saqezointment. In agreement with the previous finding **Ahmed et al 2015** reported that using lanolin for nipple trauma, signs of improvement and any problems shows that there is significant improvement on the trauma arising. grade between pre and post intervention by 7 & 14 day. Also **Dick. 2012.** who mentioned that many mothers with sore nipples had also found it is helpful to apply a thin coat of medical-grade anhydrous lanolin after feeding according to breastfeeding guideline.

On the other side **Mohammadzadeh et al.** [17] who suggested and recommended breast milk for the treatment of sore nipples the improvement time in the lanolin group was longer than the breast milk group and the control group. The healing time was also different, and longer in the lanolin group than the other 2 groups. Also another group conducted by **Gholami et al 2015** in Iran who compare the effect of lanolin ointment and aloe Vera gel on nipple soreness treatment and reported that Aloe Vera is more effective than lanolin on nipple soreness healing.

Conclusion and recommendation

The study arrived at the conclusion that Comparing between 2 methods, the results showed that Lanolin is more effective in management of breast sore than expressed breast milk especially in second and third degree of nipple trauma. In opposite to research hypothesis.

In the light of the results of the study the researcher recommends

Counseling program for women during pregnancy and immediate postpartum period about prevention and treatment of nipple sore is a necessity. As large sector of postnatal women suffer from this problem through center at antenatal and postnatal units in the hospital to facilitate the follow-up of cases.

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