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A comparative study to assess the effectiveness of warm ginger versus cold aloe vera gel compression on reduction of breast engorgement among post-natal mothers in selected Hospital Bilaspur Chhattisgarh

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Abstract

Introduction: Around the third postpartum day 1:8000 of lactating women throughout the world and 1:6500 women in India experience some degree of primary breast engorgement, which is one of the most common minor discomforts, especially among primipara. Breast engorgement subsides within 24 to 48 hours or 3-5 days by baby suckling or by expressing milk. It may last for more than 2 weeks, consequently, interferes with the start and continuation of exclusive breastfeeding. There is less study researcher found during reviewing regarding warm ginger compression and cold aloe vera gel compression on reduction of breast engorgement, During clinical posting researcher found that there is more prevalence rate of breast engorgement and felt that we have to know the non pharmacological, alternative treatment for the breast engorgement which is cost effective, without any side effect and easy to use at home setting. So, to know which alternative therapy is more effective for treatment and management of breast engorgement the researcher had chosen this study.

Objective

- To asses the breast engorgement among post natal mothers.
- To assess the effectiveness of warm ginger and cold aloe vera gel compression on reduction of breast engorgement.
- To compare the effectiveness of warm ginger and cold aloe vera gel compression on reduction of breast engorgement among post natal mothers.
- To find out the association between hot ginger and cold aloe vera gel compression with their selected socio demographic variables on reduction of breast engorgement among post natal mothers.

Conclusion: This study conclude that hot ginger compression were more effective on reduction of breast engorgement among post natal mothers.

Keywords: Warm ginger compresses, cold aloe vera gel compress, Breast Engorgement, postnatal mothers

Introduction

The postpartum, postnatal period or puerperium refers to the first 4-6 weeks following childbirth, when the mother's body returns to a non-pregnant state through physiological and anatomical changes. These changes are both retrogressive (involution of the uterus and vagina) and progressive (production of milk for lactation, restoration of the normal menstrual cycle, and beginning of a parenting role). Some of these changes may be simply bother to some of the new mother, although serious complications can also arise.

One of postpartum changes is milk production that occurs within the breast alveoli and is squeezed out into the milk ducts, which carry the milk through the breast. Milk production is stimulated by dramatic reduction in progesterone, oestrogen, and human placental lactogen levels after delivery of the placenta. When the baby suckles, the maternal brain releases prolactin hormone, which causes the alveoli to begin making milk and oxytocin hormone,

which causes muscles around the alveoli to squeeze milk out through the milk ducts.
Colostrum is the first breast milk, which occurs during pregnancy and lasts for 2-5 days postpartum. It is either yellowish or creamy in colour and much thicker than the milk that is produced later. Transitional milk occurs after colostrum and lasts for approximately two weeks. It contains more calories than colostrum and has an orange tint. Mature milk is the final milk, which is whitish or bluish in colour. It has two types; fore-milk, which found during the beginning of the feeding and hind-milk, which occurs after the initial release of milk.

Need of the study

Around the third postpartum day 72%-85% experience some degree of primary breast engorgement, which is one of the most common minor discomforts, especially among primipara. On the other hand, secondary breast engorgement may start on the 5th postpartum day or in some cases on the 9th & 10th postpartum days, when the mother is not feeding frequently or the baby removes less milk from the breast. The woman's breast may be hard with tightly stretched skin that may appear shiny; it may also become swollen, warm, tender and throbbing pain may be felt.
Warm ginger contain (Ginger Rhizome or Zingiber Officinale Roscoe) which is having analgesic and the anti-inflammatory effects of ginger through inhibiting cyclooxygenase and lipoxygenase pathways as well as preventing the metabolism of arachidonic acid. Zingiber officinale dense extract also possess significant anti-nociceptive and anti-inflammatory action after its trans-dermal delivery (Cold aloe vera gel contain the natural active ingredients, Aloe polysaccharides. Aloe vera gel has anti-inflammatory effects through inhibiting the cyclooxygenase pathway and reducing prostaglandin E2 production from arachidonic acid. There is less study researcher found during reviewing regarding warm ginger compression and cold aloe vera gel compression on reduction of breast engorgement, During clinical posting researcher found that there is more prevalence rate of breast engorgement and felt that we have to know the non pharmacological, alternative treatment for the breast engorgement which is cost effective, without any side effect and easy to use at home setting. So, to know which alternative therapy is more effective for treatment and management of breast engorgement the researcher had chosen this study.

Statement of problem

"A Comparative Study to assess the effectiveness of warm ginger versus cold aloe vera gel compression on reduction of breast engorgement among post natal mothers in selected Hospital Bilaspur Chhattisgarh."

Objective

- To asses the breast engorgement among post natal mothers.
- To assess the effectiveness of warm ginger and cold aloe vera gel compression on reduction of breast engorgement.
- To compare the effectiveness of warm ginger and cold aloe vera gel compression on reduction of breast engorgement among post natal mothers.
- To find out the association between hot ginger and cold aloe vera gel compression with their selected socio demographic variables on reduction of breast engorgement among post natal mothers.

Hypothesis

- **H_1:** There will be significant difference between warm ginger compression and cold aloe vera gel compression on reduction of breast engorgement.
- **H_2:** There will be warm ginger compression is more effective then cold aloe vera gel compression on reduction of breast engorgement.
- **H_3:** There will be significantly association between warm ginger compress mean score cold aloe vera gel compress mean score and their selected socio demographic variables.
- **H_0:** There will be no significant difference of warm ginger compress and cold aloe vera gel compress on reduction of breast engorgement.

Operational definition

- **Comparative Study:** In this study it refers to the act of comparing two or more things with a view to discovering something about one or all of the things being compared.
- **Effectiveness:** In this study it refers to the degree to which the warm ginger compress or cold aloe vera gel compress reduces breast engorgement symptoms, including swelling, firmness, pain, and discomfort. Effectiveness will be assessed through objective measures such as breast volume, pain scores, and subjective reports from participants.
- **Warm Ginger:** In this study it refers to 10 grams of ginger placed in 100 ml of water boil for 2-3 min and then with multi layered gauzes (10cm x 10cm) were Soaked in water & & placed on either or both engorged breasts for 20-25min.
- **Cold Aloe Vera Gel:** In this study it refers to 10 gm of aloe vera gel applied on every square centimetre, the gel was applied to the women's breast for 20-25 min. After the application the aloe vera gel was cleaned by using tissue.
- **Breast Engorgement:** In this study it refers to the engorgement of the breast is defined as the swelling and firmness of the breast tissue due to an accumulation of milk, often accompanied by discomfort or pain. This condition is commonly experienced by postnatal mothers as their milk supply increases and may lead to difficulty breastfeeding or expressing milk.
- **Postnatal Mothers:** In this study refers to the women who have given birth within the past six weeks and are currently experiencing breast engorgement.

Inclusive criteria

- Free from medical disease that interfere with breast feeding.
- Willing to participate in the study.
- Do not have an allergic history of ginger or aloe vera.
- Do not get any analgesics before breast engorgement treatment for at least 6 hours.

Exclusion criteria
- The participants those who are not willing to participate in the study.
- Not able to provide data for the study.
- The participants move out at the time of study.

Research Design
Research design selected for this study is comparative interventional research design.

Setting of the study
The present study was conducted in post-natal ward of selected hospital, Bilaspur Chhattisgarh.

Population of the study
In this study population is post natal mother with engorge breast.

Development of Instrument
The tool was used under two sections.

Section A: Basic data structured interview schedule: Which was developed by the researcher and entailed 3 parts:
- **Part I:** Socio- demographic data such as such as age, level of education, occupation, type of family and family income/month.
- **Part II:** Reproductive history such as gravidity, parity, number of abortions, stillbirths, and living children as well as type of last delivery.
- **Part III:** Breastfeeding history such as previous breastfeeding problems and action taken to overcome these problems.

Section B: Breast Engorgement Assessment Scale
This tool was especially designed to provide the baseline data regarding signs and symptoms of the engorged breast. It was implemented by using an observational checklist which illustrated the breast

It comprised four main parts:
- **Part I:** Engorgement was assessed using 6-Point Self Rated Engorgement Scale from 1 to 6
- **Part II: Visual Analog Scale (VAS):** This scale is a self-report device that consists current condition (redness, pain, oedema and pyrexia) of a horizontal line in centimetres from 0 to 10
- **Part III: Newton's Scale (1951):** It is considered to baseline measurement to assess breast oedema as the following: 0=No oedema (<1.5 cm above basic).
- **Part IV: Pyrexia Chart:** A thermometer is used to measure body temperature.

Scoring Criteria
Criteria measure used in this study as follows.
Total score of breast engorgement was determined by collection of tenderness, pain, oedema & pyrexia scores as follows:

Level of Engorgement Score of Engorgement
1. No breast engorgement 0-6
2. Mild breast engorgement 7-12
3. Moderate breast engorgement 13-18
4. Severe breast engorgement 19-24
   Total 0-24

Data Collection Method
Ex. Group – 1: On 1st day pre test assessment of breast engorgement will be done on post natal mother, followed by the application of warm ginger compression for 3 consecutive day and post test will be conducted on 3rd day of administration.

Ex. Group – 2: On 1st day pre test assessment of breast engorgement will be done on post natal mother, followed by the application of cold aloe vera gel compression for 3 consecutive day and post test will be conducted on 3rd day of administration.

Data Analysis
Section A: Frequency and percentage distribution of postnatal mother according to socio demographic variables.
Section B: Comparison of score between pre-test and post-test through mean score, mean%, and standard deviation.
Section C: Paired 't' test for assessing significant difference between pre- test and post-test skill score section.
Section D: Comparison between the effect of warm ginger and cold aloe vera gel compress in reducing of breast engorgement among post natal mothers.
Section E: Association of pre – test skill score of post natal mother with the selected demographic variables.

Section A
Description of socio demographic variables of post natal mothers in experimental group -1 and experimental group – 2

Section B

Table 1: Comparison of score between pre-test and post-test through mean score, mean %, and standard deviation in experimental group -I and experimental group -II

	Experimental group -1 (Warm ginger) N=30			Experimental group -2 (Cold aloe vera gel) N=30		
	Mean	Mean %	SD	Mean	Mean%	SD
Pre Test	13.66	56.90%	3.67	12.4	51.6.%	3.61
Post Test	7.86	32.70%	2.92	8.2	34.00%	2.32

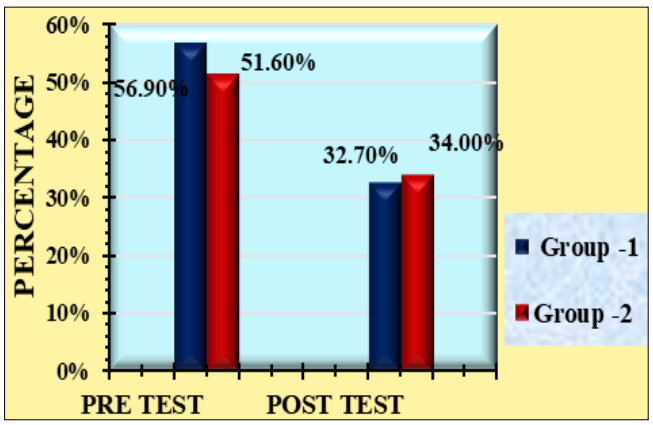

Fig 1: Mean Percentage

Section C

Table 2: Paired 't' test for assessing significant difference between pre- test and post-test skill score section

	Experimental group -1				Experimental group -2			
	SE	df	Paired 't' test	Inference	SE	df	Paired 't' test	Inference
Pre Test	0.67	29	5.65	p<0.05 (1.64) Highly significant	0.65	29	2.91	p<0.05 (1.64) Highly significant
Post Test	0.53				0.42			

Section D

Table 3: Comparison between the effect of warm ginger and cold aloe vera gel compress in reducing of breast engorgement among post natal mothers

	Coefficient of correlation	Numerical Value	Inference
Experimental group -1	0.9	r < 1	a very strong positive correlation
Experimental group-2	0.8	r <1	a very strong positive correlation

Section E

Association of pre – test skill score of post natal mother with the selected demographic variables

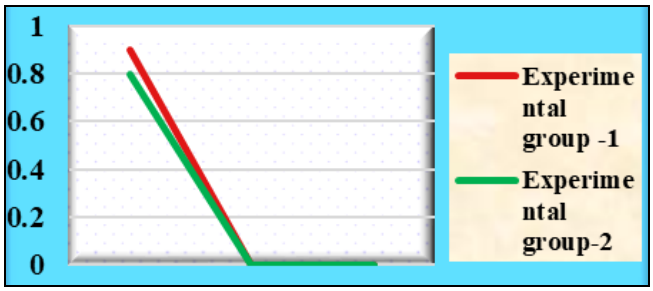

Fig 2: Coefficient of correlation

Finding of the study

Content validity of tools was ensured by verifying it with experts. Test - retest method was used for testing reliability of tool. The checklist was found reliable. A pilot study was conducted on 10 post natal mothers.

The main study was conducted in CIMS, Bilaspur, Chhattisgarh (post natal ward) and purposive sampling was done. The sample size was 60, i.e. 30 for experimental group-1 and 30 for experimental group - 2 were selected. Data collection was analyzed by an paired 't' test which reveals that the pre-test breast engorgement in experimental group – 1 was (X = 13.66, SD = 3.67) as the experimental group – 2 was (X = 12.4, SD = 3.61) and obtained 't' = 5.65; whereas, in the post- test mean breast engorgement score in experimental group – 1 (X = 7.86, SD = 2.92) were compare to experimental group – 2 (X = 8.2, SD = 2.32) and obtained 't' = 2.91; which indicated that there was significant difference in reduction of breast engorgement of experimental group – 1 than experimental group – 2.

The comparison between warm ginger compression and cold aloe vera gel compression on reduction of breast engorgement among post natal mothers through the coefficient of correlation. The calculated 'r' value of warm ginger compression is 0.9 which is a very strong positive correlation means r<1, while the calculate 'r' value of cold aloe vera gel compression is 0.8 which is also a very strong positive correlation means r<1.

Conclusion

This study concluded that warm ginger compresses were more effective in relieving breast engorgement and its associates symptoms (redness, pain, edema, pyrexia) among post natal mothers.

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