

COLD COMPRESSION OF CABBAGE LEAVES (*Brassica Oleracea Var Capitata*) ON BREAST ENGORGEMENT

Rulfia Desi Maria¹, Yeltra Armi², Mutia Felina³, Tri Rama Liana⁴

¹⁻⁴Faculty of Midwifery, Prima Nusantara Bukittinggi Health Institute, Indonesia

SUBMISSION TRACK

Received: November, 2020

Final Revision : December 2020

Available Online: December, 2020

KEYWORDS

Cold compression, cabbage leaves, breast engorgement

CORRESPONDENCE

Phone : +62 823-8156-5570

E-mail : rulfiadesi410@gmail.com

A B S T R A C T

Nausea and vomiting is the earliest, most common symptom and can cause Mothers often suffered breast engorgement at the beginning of postpartum, and this is one of the causes of early breastfeeding cessation. It causes hard breasts, pain, overall redness and increases body temperature. This study aims to determine the effect of cold compression of cabbage leaves on breast engorgement. This research used a quasi-experimental research using one group pretest-posttest design with univariate and bivariate analysis. The study population was all postpartum mothers who diagnosed with breast engorgement, sample were 6 mothers by using purposive sampling technique. Each respondent was treated with cold compression of cabbage leaves. The results obtained by the average of SEPS Score before intervention was 3.86 and the average of PUQE Score after intervention was 1.57. The data analysis test used is the paired T-test, the result p value = 0,023. With the results of this study, it is expected that the administration of cold compression of cabbage leaves can be made into recommendations and applied to postpartum mothers to decrease breast engorgement.

I. INTRODUCTION

Adequate nutrition during infancy and early childhood is essential to ensure the growth, health and development of children to their full potential. It has been recognised worldwide that breastfeeding is beneficial for both the mother and child, as breast milk is considered the best source of nutrition for an infant. Economic and social benefits are also provided to the family, the health care system and the employer(1).

The World Health Organization (WHO) recommends that infants be exclusively breastfed for the first six months, followed by breastfeeding along with complementary foods for up to two years of age or beyond 3. Exclusive breastfeeding can be defined as a practice whereby the infants receive only breast milk without mixing it with water, other liquids, tea, herbal preparations or food in the first six months of life, with the exception of vitamins, mineral supplements or medicines 4. Breastfeeding an infant exclusively for the first 6 months of life carries numerous benefits such as lowered risk of gastrointestinal infection, pneumonia, otitis media and urinary tract infection in the infant while mothers return to her pre-pregnancy weight very rapidly and have a reduced risk of developing Type 2 diabetes(1).

The incidence of mastitis among breastfeeding women in different countries varies from 2% to 33%, approximately 10% on average, and shows no trend towards decline. According to the official data, the incidence of mastitis in Russia is 2–3%, while according to the results of the Sample Survey of Reproductive Health of 10 000 Russian women conducted in 2011 by the Federal State Statistics Service together with the Ministry of Health and Social Development, the UN Population Fund (UNFPA), Centers for Disease Control and Prevention (CDC) (USA), mastitis occurs in 10% of breastfeeding women. The HAI Epidemiological Service explains this data divergence by an incomplete record of postpartum diseases in hospitals(2).

To identify the best approaches to mastitis management in breastfeeding women, we reviewed available international guidelines. We collected information about causative agents, their correlation with breast-fed infants and sensitivity to antibiotics, incidence of different types of mastitis and its main treatment principles. Usually, mastitis is predisposed by breast engorgement or blocked ducts(2).

Breast engorgement in non-breastfeeding mothers in the first few days after childbirth is the sign of a breast dysfunction. Lack of peripheral prolactin receptors stimulation in the breast provokes hormonal imbalance, i.e. increased level of prolactin in combination with decline of oxytocin secretion and concentration of placental steroids, primarily of progesterone. According to our data, serum progesterone concentration on the 3rd–4th days postpartum in women with normal galactopoiesis is on average 6.8 ± 1.8 nmol/L and prolactin concentration is 5182 ± 1117

mIU/L, whereas in breast engorgement the average progesterone level is significantly lower, while the average prolactin level is higher, i.e. 5.5 ± 1.4 nmol/L and 6632 ± 1074 mIU/L respectively ($p < 0.05$)(2).

Severe swelling, breast engorgement and tenderness occur in connection with the hormonal imbalance, which disrupts both expression of breast milk and breastfeeding. Besides, heavy expression of breast milk in such conditions worsens swelling and engorgement of the breasts and may also cause hemorrhages and alveolar damage(2).

The review of traditional methods of severe breast engorgement management shows their ineffectiveness. Thus, cabbage leaf compresses, massage, acupuncture and physiotherapeutic procedures are barely effective, drotaverine with oxytocin injections intended to cause contraction of alveolar myoepitheliocytes are not effective either, given that milk ducts are compressed by swollen breast milk glands and conversely, warming alcohol compresses block the effect of oxytocin on the contractile activity of alveolar myoepitheliocytes(2).

Fever may occur in fifteen percent of the mothers, but is typically less than 39°C and lasts for less than one day. Several approaches for the treatment of breast engorgement in breastfeeding women include: warm compresses before breastfeeding, cold therapy, cabbage leaves, breast massage, milk expression, and anti-inflammatory oral medications. By

using Gua-Sha therapy, nurses can handle breast engorgement problems more effectively in primary care and help mothers both physically and psychologically(3).

Cabbage is known to contain sinigrin rapine, mustard oil, magnesium, oxalate and sulphurheterosides. Cabbage has both anti-inflammatory and anti-irritant properties. Nurses contribute to the health and well-being of women, children, and family, by promoting skilled and specialized care in the clinical management of breastfeeding in their professional practice. Also, they should guide and demonstrate maneuvers to express milk to mothers so they can do when feeding their babies, and prevent the occurrence of breast engorgement(3).

The nurse should focus on prevention of breast engorgement by providing counseling to the mother about starting breastfeeding as soon as possible after the birth, to give the baby time to learn to breastfeed before the breasts become full and firm, avoid early use of bottles. Once the milk comes in the mother should breastfeed at least eight times in 24 hours to prevent over fullness and use hand expression or a breast pump to remove the remaining milk. Also, early postpartum care is necessary to diagnose and treat complications(3).

This study aims to identify the effect of Cold Compression of Cabbage Leaves (*Brassica Oleracea Var Capitata*) on Breast Engorgement

II. METHODS

This type of research was a quantitative study that used Pre-Experimental Design method with the pretest-posttest control group design. The populations in this study were all of breastfeeding mother.

The total sample was 7 respondents, sampling using non-probability techniques, purposive sampling. Breast engorgements were observed by using six-point engorgement scale 3221(SPES) questionnaires before and after intervention.

Cabbages Leaves were given after whole cabbage leaves in the freezer for 20 minutes then attach to the breast that experienced engorgement by putting it in the bra for 30 minutes.

Data collection tools used in this study were six-point engorgement scale 3221(SPES) questionnaires. The analysis was done by univariate and bivariate using SPSS for Windows applications. Data were normally distributed based on the normality test with Saphiro Wilk, so the data was processed by Paired T-Test to see the difference in the mean difference between the two paired samples.

III. RESULT

Table 1. Average of SPES Score before Intervention

SPES Score	Mean	SD	Min-Max
Pretest	3.86	0.690	3-5

Based on Table 1 we know that the average SPES Score before intervention were 3.86 with 0.690 deviation standard. Minimal volume was 3 and maximal volume was 5.

Table 2 Average of SPES Score before Intervention

SPES Score	Mean	SD	Min-Max
Posttest	1.57	0.787	1-3

Based on Table 2 we know that the average SPES Score after intervention were 1.57 with 0.787 deviation standard. Minimal volume was 1 and maximal volume was 3.

Table 3. The Effect of Cabbage Leaves on Breast Engorgement

		Paired T-Test			
	Ranks	N	Sum of z Ranks	P value	
PostTest	Negative Ranks	6	3.50	-	0,023
Pretest	Positive Ranks	0	0.00	2.271	
	Ties	1	21.00		
	Total	7	0.00		

Based on Table 3, we know that The scale of breast engorgement in 6 respondents experienced a decrease in the scale from pre-test to post-test with a mean decrease in the scale of 3.50 and the pretest and post-test scores for 1 respondent had the same value. Due to the p value <0.05 (P = 0.023) it can be concluded that the hypothesis is accepted, meaning that there is an effect of cold cabbage leaves compresses to breast engorgement on postpartum mothers.

IV. DISCUSSION

Based on research conducted by Miftakhur, et al. (2019) regarding the effectiveness of cold cabbage leaf compresses on the scale of breast engorgement in postpartum mothers in Kediri, the results showed that the scale of breast engorgement in postpartum mothers before being given a cabbage leaf compression (*Brassica Oleracea*) was a scale of 4 , after being given a cabbage leaf compression (*Brassica Oleracea*), the breast swelling became a scale of 1 which means that a cabbage leaf compression (*Brassica Oleracea*) can be used as a therapy to reduce the scale of swelling and prevent and prevent breast engorgement in postpartum mothers(4).

Masoud in 2018 revealed that the most of majority of breast engorgement in control group of the mothers whereas in the study group it is more than half knows that breast engorgement is considered one of the most serious problems which interfere with breast feeding. Less than half from study & control group do not know about the causes of it. The majority of study & control group reported correct but incomplete answer regarding signs & symptoms of breast engorgement. While comparing the results that of the (PadmasreeSR .,et al., 2012).added that the findings were more or less consistent in nature; it may be due to influence of extraneous variables. Comparing the incidence of breast engorgement, less than quarter of mothers only reported breast engorgement in study group where asthe half of mother in the Control group, which shows remarkable decrease in the incidence of breast engorgement

in the former group. Concerning symptoms of breast engorgement, the current study illustrated that more than twenty percent of each group were suffered from firm and tender breasts (Level four of engorgement). Also, there was a statistically significant difference between the control and study symptoms and levels of breast engorgement for the two groups ($p < .05^*$). The methods of nursing care (cabbage leaves compresses) for the management of breast engorgement was effective. This agree with(1).They mentioned that each treatment was applied for 30 minutes for three times daily for two days. Treatment was effective in reducing pain and engorgement(3).

Masoud reported that, pain score for the cabbage group reduced more than half. While the group who use routine care, their pain score reduced less than third during the post-intervention. This agree with (Snowden HM et al., 2011) who reviewed research

Studies to determine the effects of several interventions to relieve symptoms of breast engorgement among breastfeeding women and found that cabbage leaves were effective in the treatment of this painful condition. Cabbage leaves were preferred by the mothers. The advantage of using cabbage leaves is its low cost and convenience as compared to other medical regimens. Also,(Roberts KL et al., 2013) mention that when compared the efficiency of cabbage leaf extract with the treatment of breast engorgement in lactating women; they concluded that both the groups received equal relief from the discomfort and the hardness in breast tissue decreased substantially(3).

(Hill PD &Humenick S., 2014) who reported that 3the use of cabbage leaves for engorgement is not effective. The study involved 120 mothers, who took part in the research during their post-partum hospital stay. 60 of the women applied cabbage leaves after a feed, leaving them in place until they had reached body temperature. This process was repeated for a total of four feeds, and after each application the women were asked to report whether they felt their breasts were engorged. A control group of 60 women, who did not use cabbage leaves, were also asked to report whether their breasts were engorged. These differences between the two groups is very small indeed, and it is not statistically significant, so the only appropriate conclusion is that there is no support for the hypothesis that cabbage leaves prevent engorgement (3).

Masoud showed that there was a statistically significant difference between the pretest and posttest of the pain score and engorgement score for the cabbage group and the routine care group was highly significant ($p < .001^*$).That is agree with (Wong P ., 2011) there are several approaches for the treatments of breast engorgement have been explored as; cabbage compresses that is highly significant ($p < .001$). In Taiwan a Randomized Controlled

Trial .According to his colleges, they stated that, cabbage leaf treatment used on women with breast engorgement to reduce pain, the firmness of the engorged breasts and increased the duration of breastfeeding(3).

A systematic review of Siregar in 2018, stated that Herbal compresses, leaf compresses hollyhock, cabbage compresses and gua sha can be used to reduced breast engorgement during lactating, but there is no strong evidence to recommend which method is most effective because all studies still have a high risk of bias, more rigorous follow-up studies are needed to see which interventions are most effective(5).

Cabbage leaves has both anti-irritant and antibiotic properties, which help to relieve tissue congestion and improve the flow of blood in and out of the area, allowing the body to reabsorb the fluid surrounding the breast, and also help to enhance venous and lymphatic drainage and alleviate engorgement symptoms(6).

Application of green cabbage leaves to the breasts helps to reduce swelling. It should be kept inside the brassiere for 15–20 minutes in the engorged breast and should not be used more than three times per day. Discontinue the application of cabbage leaves as soon as engorgement begins to subside. Gentle massage in the breast can also help the milk flow more readily. If the nipple and areola are swollen, the mother is not supposed to feed without softening the breast. Manual expression or breast pump can be used to remove little amount of milk from the breast which in turn helps to soften the nipple and areola before feeding(6).

Astuti in 2019 also concluded that there was significant effect of cabbage compress to decrease postpartum sectio caesarea with breast engorgement after compresses cabbage. This intervention is recommended to increase the comfort of postpartum sectio caesarea with breast engorgement(7).

V. CONCLUSION

Mothers often suffered breast engorgement at the beginning of postpartum, and this is one of the causes of early breastfeeding cessation. It causes hard breasts, pain, overall redness and increases body temperature. Application of green cabbage leaves to the breasts helps to reduce swelling and pain. It is recommended for postpartum mothers to use this intervention to treat breast engorgement.

REFERENCES

1. Motee A, Jeewon R. Importance of exclusive breast feeding and complementary feeding among infants. *Curr Res Nutr Food Sci*. 2014;2(2):56–72.
2. Pustotina O. Management of mastitis and breast engorgement in breastfeeding women. *J Matern Neonatal Med*. 2016;29(19):3121–5.
3. Masoud AAM, Kholy GA El, Ramadan SA-E, Ahmed ARS. The Effect of Cabbage Leaves on Relief Breast Engorgement among Postpartum Women. 2018;
4. Rohmah M, Wulandari A, Sihotang DW. Efektivitas Kompres Daun Kubis (*Brassica Oleracea*) terhadap Skala Pembengkakan Payudara pada Ibu Post Partum di PMB Endang Kota Kediri. *J Qual Women's Heal*. 2019;2(2):23–30.
5. Sustamy RP, Pratiwi RD, Wahyuni S. Proceedings of International Conference on Applied Science and Health ICASH-A072 USING THE SMARTPHONE APPLICATION FOR PREGNANCY Proceedings of International Conference on Applied Science and Health. 2019;(4):571–8.
6. Rajaveni P. Cabbage Leaves: An Intervention for Breast Engorgement. *Pondicherry J Nurs*. 2020;12(2):54–5.
7. Astuti Y, Anggarawati T. Pengaruh Kompres Kubis Terhadap Breast Engorgement Ibu Postpartum Sectio Caesarea. *Indones J Nurs Res [Internet]*. 2019;2(1). Available from: <http://jurnal.unw.ac.id:1254/index.php/ijnr/article/view/232>