Investigating the Effect of Non-Pharmacological Treatments on Reduction of Breast Engorgement in Breastfeeding Women: A Review Study

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Abstract

Background: Breast engorgement is a common postpartum problem that has been identified as the third maternal factor that leads to a decrease or discontinuation of breastfeeding and breast abscess. Considering the side effects of chemical drugs during lactation, the aim of the present review study was to investigate the effect of non-pharmacological treatments on reduction of breast engorgement in breastfeeding women.

Materials and Methods: The search process was to find the clinical trials regarding the correlation of preterm infant weight with aromatherapy on different electronic databases, including Cochrane, Web of Science, EMBASE, Scopus, and Medline (via PubMed). No time and language restrictions were considered in this study.

Results: According to the results, a significant decrease was seen in breast severity of engorgement in hollyhock compress (p<0.001); in a study, Ginger compression group was more effective than control group (p<0.001). In addition, the herbal compress was more effectiveness than hot compress groups. In another study, the cabbage leaves and gel packs groups reduced significantly in pain compared to the control group. In a study, Intermittent compress (hot and cold) was more effective than acupressure in decreasing the intensity of breast hyperemia in lactating women. Some studies showed that cabbage is beneficial on breast engorgement and some studies did not find any significant difference between studies.

Conclusion: Hollyhock, Ginger, Herbal compress and Cabbage leaves were effective for treatment of breast engorgement in Lactating women.

Key Words: Breast engorgement, Breastfeeding, Non-pharmacological treatments.


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1- INTRODUCTION

Breastfeeding is the best method to help mothers stay healthy and have a healthy baby. World Health Organization (WHO) recommends that infants should be exclusively breastfed for the first six months of life. However, some of the problems occurring during the early postpartum period have a negative effect on breast sucking and breastfeeding. Therefore, early detection and resolution of breastfeeding problems seen in the postpartum period is essential for maternal and infant health (1). Factors affecting breastfeeding in the first week postpartum include breastfeeding problems such as nipple shape, breast pain or injury, inadequate milk supply and breast engorgement. Studies show that approximately 92% of primiparous mothers experience changes in breastfeeding problems. These factors can reduce successful breastfeeding and maternal breastfeeding self-confidence (2).

Approximately two days after the baby is born, the mother's breasts are full of milk; this is a normal physiological process where the breasts become heavy and swollen, however, breasts should not be painful or hard under normal conditions. Breast engorgement occurs when a mother makes more milk than her baby uses. Full breasts can lead to problems such as blocked milk ducts, breast infection, and lack of effective milk supply (3). Breast engorgement is a common physiological problem during lactation that may cause breast swelling, pain, fever, and eventually cessation of breastfeeding in the early postpartum period (4). It generally occurs 2 to 3 days after birth and affects more than two-thirds of women by day 5; however, some women experience this problem on days 9 and 10 postpartum (5). Breast engorgement may affect the areola or the main body of the breast (peripheral engorgement) and may affect only one breast or both. Engorged nipple may make the baby unable to breastfeed successfully and this may worsen the engorgement. In the case of concerns about sufficient milk supply, or breast pain and swelling, the problem may become complicated and discourage women from continuing breastfeeding. Women may also receive limited advice and support from health professionals; and the situation may get worse in the case of being unaware of how to manage these conditions (6).

Studies show that the best engorgement-related intervention is prevention. Frequent breastfeeding (1-12 times) in 24 hours, on-time feeding, and kangaroo care immediately after delivery, avoid limiting the frequency of breastfeeding, mother-infant room-sharing, and training proper breastfeeding techniques have been identified as engorgement prevention measures. Suggested breast engorgement medications include the use of diuretics, anti-inflammatory drugs such as denizen, bromelain, acetaminophen, ibuprofen, etc. (7-10). However, these medications can have side effects. Some of the recommended non-pharmacological interventions for breast engorgement include training proper breastfeeding, frequent breastfeeding and warm baths, use of cold compresses on the breasts during breastfeeding intervals, use of warm compresses before breastfeeding, and breast massage.

Considering the side effects of chemical drugs, medical science researchers today are seeking the easiest, least complicated, and most effective treatments, so, they have resorted to complementary or alternative medicine. One of complementary strategies is massage therapy. On the other hand, the use of herbal medicines, as an alternative therapy in most medical systems in the world, is being discussed today. Medications and herbal medicines have been used for centuries to improve the health status of women during pregnancy, childbirth, and...
breastfeeding (5). Considering side effects of medications, various herbs such as cauliflower, mentha piperita L., salvia officinalis, ginger, and alcea have been recommended for the treatment of engorgement in either oral form or oil massage (2, 11). Currently, there are several treatments to reduce breast engorgement that, given their conversional effects, there is a lack of sufficient evidence to recommend a specific treatment. Therefore, the aim of the present review study was to evaluate the effect of herbal treatments on the reduction of breast engorgement in breastfeeding women.

2- MATERIALS AND METHODS

2-1. Search strategy

In this review, all clinical trials evaluating the effect of Herbal medicine, Brassica, Cabbage, Ginger, Hollyhock, Malvaceae on breast engorgement in lactating women were searched on the electronic databases of Scopus, EMBASE, Cochrane, Web of Science and Medline (via PubMed) with no language or time restrictions (till October 2019) using the combination keywords of (Breast Hyperemia OR, Breast Engorgement OR Treatment OR Therapeutics OR Therapy) AND (Herbal Medicine OR Herbal) AND (Brassica OR Cabbage OR Ginger, Hollyhock OR Malvaceae), and their Persian synonyms and all their possible combinations, were searched in the national databases (Magiran, SID, and Iran.Doc). Two independent researchers performed the search process and a supervisor judged any disagreement in this regard.

2-2. Included studies

Randomized controlled trials (RCT), clinical studies both randomized and nonrandomized either retrospective or prospective. Due to the limited number of published RCT in the literature, other types of clinical studies were included. Pilot, preliminary and case report studies were not included due to limited sample size and higher risk of bias. Studies published in Persian and English up to the end of October 2019.

2-3. Selection process

Two reviewers, who reviewed initially the abstracts of searched articles and then downloaded their full text to review carefully, chose the relevant studies independently. Finally, the articles that met the inclusion criteria were enrolled in the systematic review, and their used relevant references were reviewed to find further studies. The third party judged any disagreement.

3- RESULTS

In this review we find cabbage, Hollyhock, Ginger and Herbal tea were more effective for treatment of breast engorgement in Lactating women.

3-1. Cabbage

In a controlled clinical trial, Lim et al. compared the impacts of early breast care (EBC), and cabbage compression early breast care (CCEBC) on alleviating the breast pain and breast hardness with general nursing breast care (GNBC) among 60 primiparous women following cesarean section, who were allocated to three intervention groups of CCEBC, EBC and GNBC. All interventions lasted over 10 minutes prior to breast feeding from the second day to the fourth day after delivery. A significant breast hardness relief was reported in the CCEBC group when comparing to the both EBC and GNBC groups. All three groups showed no significant difference in both core body and breast skin temperature (11). In a study of Gagandeep et al., the research units were 60 postnatal mothers within two experimental (receiving cabbage leaves),
and control (receiving routine care) groups of 30. According to the findings, 86.20% of the experimental group experienced no breast tenderness at the third day in comparison with 58.62% of control group, thereby suggesting the effectiveness of cabbage leaves in the alleviation of breast tenderness (12). In Wong et al.’s study, 227 mothers with breast engorgement were randomly allocated into the groups of cold gel packs, cold cabbage leaves and control. A significant decrease was observed following half an hour after first administration of cabbage leaves at all intervention periods in the gel packs and cabbage leaves groups when comparing to the control group (4). Thomas et al. compared the effects of chilled cabbage leaves and routine care (warm compress) on the alleviation of breast engorgement in the postnatal mothers. They showed more effectiveness of the warm compress (p=0.001) in comparison with the chilled cabbage leaves in relieving the breast engorgement (13).

3-2. Hollyhock

In the Khosravan et al.’s study, the research units consisting of females with breast engorgement (n= 40) were allocated in two groups of intervention (hollyhock leaf compress), and control. The results demonstrated that the total severity of breast engorgement in the intervention group was significantly different from the control group (p<0.001). Moreover, the breast engorgement was improved following the administration of hollyhock leaf compress plus routine relevant interventions (5).

3-3. Ginger

The second research randomly divided the study mothers to intervention and conventional care groups. The intervention group received the ginger warm compression three times a day for two days. The mean total post-intervention engorgement in right and left breast showed a reduction in both groups, but the severity of breast engorgement was significantly higher in the intervention group when comparing with the control group (p<0.001) (2).

3-4. Herbal compress

The third study was a randomized controlled trial on the postpartum mothers with the breast engorgement in two groups of herbal or hot compress interventions. The findings indicated more effectiveness in the reduction of breast engorgement pain in the herbal group than in the hot compress group (14).

4- DISCUSSION

The aim of the present review study was to evaluate the effect of herbal treatments on the reduction of breast engorgement in breastfeeding women. The results showed that some herbs such as herbal compresses, ginger, hollyhock and cabbage are useful for the treatment of breast engorgement in breastfeeding women. Lactation is a normal physiological process that begins in the sixteenth week of pregnancy and continues after childbirth regardless of the outcome of the birth. Milk secretion is a complex mechanism. High levels of estrogen, progesterone, and prolactin stimulate the anatomy of the breasts during pregnancy. Prolactin triggers the synthesis of lactose in the breasts while estrogen and progesterone stop it during pregnancy. Estrogen and progesterone levels drop dramatically after birth, which causes prolactin to initiate milk production. Prolactin concentrations are typically high for weeks postpartum even in women who are not breastfeeding; however, these processes do not lead to painful and hard breasts. The inadequate milk removal from the breasts is mainly due to breast engorgement during breastfeeding. Engorgement and insufficient milk secretion, can cause problems such as milk duct obstruction, mastitis, and decreased
奶分泌（15）。妊娠期间乳汁体积的突然增加，淋巴和动脉密度的增加，以及间质空间中的液体增多导致乳腺肿胀，如果不及时治疗，可能会导致乳腺脓肿，从而中断母乳喂养和抗生素治疗（16）。

洋甘菊（Althaea officinalis L.）是一种用于治疗的草药，自古以来就被使用。这种植物的叶子和根部都被用作药物。其根部含有黄酮和糖苷，而叶子含有香豆素 scopoletin。它还具有潜在的治疗效果，因为其有价值的次生代谢物。此外，它的抗菌和抗炎活性，以及它在粘膜转移和多糖附着中的作用都已在之前的研究中报告（17）。

事实上，洋甘菊的叶子含有粘液、多糖、黄酮、酚酸、单宁和脂肪。珍贵的研究还表明，其衍生物的皮肤使用对乳腺炎、乳头裂和阻塞的乳管有效，其口服使用已被推荐以增加乳汁分泌（5）。Khorsrvan et al.（2015）进行了一项研究，研究洋甘菊叶子压缩和热冷按压对哺乳期母亲乳腺肿胀的影响。结果显示，热冷按压单独和与洋甘菊叶子压缩联合使用都能减轻乳腺肿胀；然而，洋甘菊叶子压缩能更快地缓解症状（5）。

卷心菜（Brassica oleracea L. var. Capitata）是一种在世界各地都很容易获得的蔬菜，含有具有抗氧化和抗炎活性的植物化学物质。研究显示，卷心菜提取物能增加AhR配体并减少MCF10A细胞，其抗炎性质被认为是使用卷心菜叶子压缩来克服哺乳期乳腺肿胀的关键原则（18）。此外，卷心菜叶子含有抗细菌和抗炎活性化合物，以及硫化合物，具有抗生、抗菌和抗炎症性质，这些性质有助于缓解疼痛和肿胀（4）。

一种研究对60名母乳喂养的妇女进行了研究，其中30名在实验组，30名在对照组。结果表明，实验组的乳头敏感性和一致性显著降低（19）。生姜具有抗炎、抗菌、退热和抗肿胀，以及抗血管生成作用，其压缩已被推荐用于治疗乳腺疼痛和口服增加乳汁分泌（2）。

生姜具有抗炎、抗细菌、抗热和抗肿胀作用，以及抗血管生成作用，其压缩已被推荐用于治疗乳腺疼痛和口服增加乳汁分泌（2）。此前的研究报告了许多有益作用，包括抗炎、抗氧化和抗恶心性质。生姜还能通过温暖周围的环境来扩张血管，结果是一个机制，用于增加乳汁供应（20）。在一项研究中，温暖生姜压缩对哺乳期自我效能的影响在76
breastfeeding women, Monazzami et al. (2019) showed that warm ginger compresses improved breast engorgement symptoms faster and increased breastfeeding self-efficacy score (2).

Ketsuwan et al. (2018) studied the effect of herbal compresses on postpartum breast engorgement. They used compact herbal balls containing dried herbs such as Z. cassumunar Roxb. rhizomes (90.5 g), C. longa L. rhizomes (18.2 g), Cymbopogon citratus (DC) Stapf leaves and leaf sheaths (18.2 g), Acacia concinna (Willd.) DC leaves (18.2 g), Tamarindus indica L. leaves (54.3 g), Citrus hystrix DC peels (36.2 g), Blumea balsamifera (L.) DC leaves (5.4 g), salt (3.6 g), and camphor (5.4 g), were effectiveness for reduced pain and treatment of breast engorgement in Lactating women; however, Intermittent compress (hot and cold) is more effective than acupressure in decreasing of the intensity of breast hyperemia.

4-1. Study Limitations
A four-degree scale is used to assess the severity of breast fissure. Grade 1: Minimal breast sensitivity, minimal tolerance and minor edema. Grade 2: Breasts are somewhat painful, moderate in size and mildly swollen. Grade 3: Breasts are very painful, large in size and moderately swollen. Grade 4: Breasts are very painful with a specific size and severely swollen (14). One of the limitations of the present study is that different articles have used different questionnaires to classify degree of breast engorgement.

5- CONCLUSION
Hollyhock, Ginger, Cabbage leaves, and Herbal compress, [herbal compress ball weighed 250 g and contained dried herbs that included the following: Z. cassumunar Roxb. Rhizomes (90.5 g), C. longa L. rhizomes (18.2 g), Cymbopogon citratus (DC) Stapf leaves and leaf sheaths (18.2 g), Acacia concinna (Willd.) DC leaves (18.2 g), Tamarindus indica L. leaves (54.3 g), Citrus hystrix DC peels (36.2 g), Blumea balsamifera (L.) DC leaves (5.4 g), salt (3.6 g), and camphor (5.4 g)], were effectiveness for reduced pain and treatment of breast engorgement in lactating women; however, Intermittent compress (hot and cold) is more effective than acupressure in decreasing of the intensity of breast hyperemia.

6- CONFLICT OF INTEREST: None.
7- REFERENCES


