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[Intervention Review]

Treatments for breast engorgement during lactation

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ABSTRACT

Background

Breast engorgement is a painful condition affecting large numbers of women in the early postpartum period. It may lead to premature weaning, cracked nipples, mastitis and breast abscess. Various forms of treatment for engorgement have been studied but so far little evidence has been found on an effective intervention.

Objectives

This is an update of a systematic review first published by Snowden et al. in 2001 and subsequently published in 2010. The objective of this update is to seek new information on the best forms of treatment for breast engorgement in lactating women.

Search methods

We identified studies for inclusion through the Cochrane Pregnancy and Childbirth Group's Trials Register (30 June 2015) and searched reference lists of retrieved studies.

Selection criteria

Randomised and quasi-randomised controlled trials.

Data collection and analysis

Two review authors independently assessed trials for eligibility, extracted data and conducted 'Risk of bias' assessments. Where insufficient data were presented in trial reports, we attempted to contact study authors and obtain necessary information. We assessed the quality of the evidence using the GRADE approach.

Main results

In total, we included 13 studies with 919 women. In 10 studies individual women were the unit of analysis and in three studies, individual breasts were the unit of analysis. Four out of 13 studies were funded by an agency with a commercial interest, two received charitable funding, and two were funded by government agencies.

Trials examined interventions including non-medical treatments: cabbage leaves (three studies), acupuncture (two studies), ultrasound (one study), acupressure (one study), scraping therapy (*Gua Sha*) (one study), cold breast-packs and electromechanical massage (one study), and medical treatments: serrapeptase (one study), protease (one study) and subcutaneous oxytocin (one study). The studies were small and used different comparisons with only single studies contributing data to outcomes of this review. We were unable to pool results in meta-analysis and only seven studies provided outcome data that could be included in data and analysis.

Non-medical

No differences were observed in the one study comparing acupuncture with usual care (advice and oxytocin spray) (risk ratio (RR) 0.50, 95% confidence interval (CI) 0.13 to 1.92; one study; 140 women) in terms of **cessation of breastfeeding**. However, women in the acupuncture group were less likely to develop an **abscess** (RR 0.20, 95% CI 0.04 to 1.01; one study; 210 women), had less severe symptoms on day five (RR 0.84, 95% CI 0.70 to 0.99), and had a lower rate of **pyrexia** (RR 0.82, 95% CI 0.72 to 0.94) than women in the usual care group.

In another study with 39 women comparing cabbage leaf extract with placebo, no differences were observed in **breast pain** (mean difference (MD) 0.40, 95% CI -0.67 to 1.47; *low-quality evidence*) or **breast engorgement** (MD 0.20, 95% CI -0.18 to 0.58; *low-quality evidence*). There was no difference between ultrasound and sham treatment in **analgesic requirement** (RR 0.98, 95% CI 0.63 to 1.51; one study; 45 women; *low-quality evidence*). A study comparing Gua-Sha therapy with hot packs and massage found a marked difference in **breast engorgement** (MD -2.42, 95% CI -2.98 to -1.86; one study; 54 women), **breast pain** (MD -2.01, 95% CI -2.60 to -1.42; one study; 54 women) and **breast discomfort** (MD -2.33, 95% CI -2.81 to -1.85; one study; 54 women) in favour of Gua-Sha therapy five minutes post-intervention, though both interventions significantly decreased breast temperature, engorgement, pain and discomfort at five and 30 minutes post-treatment.

Results from individual trials that could not be included in data analysis suggested that there were no differences between room temperature and chilled cabbage leaves and between chilled cabbage leaves and gel packs, with all interventions producing some relief. Intermittent hot/cold packs applied for 20 minutes twice a day were found to be more effective than acupressure ($P < 0.001$). Acupuncture did not improve maternal satisfaction with breastfeeding. In another study, women who received breast-shaped cold packs were more likely to experience a reduction in pain intensity than women who received usual care; however, the differences between groups at baseline, and the failure to observe randomisation, make this study at high risk of bias. One study found a decrease in breast temperature ($P = 0.03$) following electromechanical massage and pumping in comparison to manual methods; however, the high level of attrition and alternating method of sequence generation place this study at high risk of bias.

Medical

Women treated with protease complex were less likely to have no improvement in **pain** (RR 0.17, 95% CI 0.04 to 0.74; one study; 59 women) and **swelling** (RR 0.34, 95% CI 0.15 to 0.79; one study; 59 women) on the fourth day of treatment and less likely to experience no overall change in their symptoms or worsening of symptoms (RR 0.26, 95% CI 0.12 to 0.56). It should be noted that it is more than 40 years since the study was carried out, and we are not aware that this preparation is used in current practice. Subcutaneous oxytocin provided **no relief at all in symptoms** at three days (RR 3.13, 95% CI 0.68 to 14.44; one study; 45 women).

Serrapeptase was found to produce some relief in breast pain, induration and swelling, when compared to placebo, with a fewer number of women experiencing slight to no improvement in overall **breast engorgement, swelling and breast pain**.

Overall, the risk of bias of studies in the review is high. The overall quality as assessed using the GRADE approach was found to be low due to limitations in study design and the small number of women in the included studies, with only single studies providing data for analysis.

Authors' conclusions

Although some interventions such as hot/cold packs, Gua-Sha (scraping therapy), acupuncture, cabbage leaves and proteolytic enzymes may be promising for the treatment of breast engorgement during lactation, there is insufficient evidence from published trials on any intervention to justify widespread implementation. More robust research is urgently needed on the treatment of breast engorgement.

PLAIN LANGUAGE SUMMARY

Treatment for breast engorgement (overfull, hard, painful breasts) in breastfeeding women

Review question

What are the best forms of treatment for engorged breasts in breastfeeding women?

Background

Breast engorgement is the overfilling of breasts with milk leading to swollen, hard and painful breasts. Many women experience this during the first few days after giving birth, although it can occur later. It is more common when the timing of breastfeeding is restricted or the baby has difficulty sucking or the mother is separated from her newborn. This leads to the breasts not being emptied properly. Breast engorgement may make it difficult for women to breastfeed. It may lead to complications such as inflammation of the breast, infection and sore/cracked nipples. So far, consistent evidence for effective forms of treatment is lacking.

Study characteristics

We searched for trials on any treatments for breast engorgement in breastfeeding women. We looked at 13 trials including 919 breastfeeding women who had engorged breasts. The trials looked at treatments including acupuncture, acupressure, cabbage leaves,

cold packs, medication, massage and ultrasound. Four of the studies were funded by an agency with a commercial interest in the results of the studies, two received charitable funding and two were funded by government agencies. The other five did not declare the source of funding.

Results

One study comparing acupuncture with usual care (advice and oxytocin spray) found no difference in terms of stopping breastfeeding. However, women in the acupuncture group were less likely to develop an abscess, had less severe symptoms on day five and had a lower rate of fever than women in the usual care group. Three trials looking at cabbage leaves showed no difference between room temperature and chilled cabbage leaves, between chilled cabbage leaves and gel packs and between cabbage cream and the inactive cream; however, all forms of treatment provided some relief. Hot/cold packs were found to be more effective than acupressure. *Gua Sha* scraping therapy was found to be more effective than hot packs and massage in reducing symptoms of breast engorgement, though both forms of treatment decreased breast temperature, engorgement, pain and discomfort at five and 30 minutes after treatment. A study on ultrasound therapy had the same, minimal effect as the fake ultrasound, whereas oxytocin injections in another study provided no relief at all. When breast-shaped cold gel packs were compared with routine care, women who used gel packs seemed to have less pain; however, the study was of very low quality making the results unreliable.

Quality of evidence

The quality of evidence was low due to the small number of participants in the included studies and limited number of studies looking at the same outcomes. More robust research is urgently needed on the treatment of breast engorgement.