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Treatments for breast abscesses in breastfeeding women

Some women develop a breast abscess while breastfeeding, called a lactational breast abscess. An abscess is a collection of infected fluid within the breast tissue. The aim of treatment is to cure the abscess quickly and effectively, ensuring maximum benefit to the mother with minimal interruption of breastfeeding.

Presently, lactational breast abscesses are treated by incision and drainage or needle aspiration, with or without diagnostic ultrasound. Antibiotics may or may not be prescribed. For incision and drainage the abscess is cut open with a scalpel (blade) to release the infected fluid. A drain may be inserted into the wound to help the infected fluid drain or may be left open so that the infected fluid drains naturally. A less invasive way to treat the breast abscess is by needle aspiration. A needle is inserted into the cavity of the breast abscess and a syringe is used to draw out the infected fluid, often using ultrasound guidance. As there are advantages in using this method e.g. no scars, reduced hospitalisation etc. the trend is to use this method more often.

We wanted to find evidence on the effectiveness of different treatments. We looked at the time taken for the abscess to heal using the different types of treatments, the number of women who continued to breastfeed after treatment and how many women had healed in the each group after treatment. The definition of healing varied across the studies.

We found six studies, of which four studies with a total of 325 woman contributed data. These studies compared needle aspiration versus incision and drainage. Needle aspiration appeared to decrease the healing time compared to incision and drainage, but large proportions of women were excluded from the analysis and it was therefore difficult to make conclusions. For the outcome continuation of breastfeeding, both of the studies showed that women treated with needle aspiration were more likely to continue breastfeeding compared to incision and drainage. In two studies, breast abscesses did not heal in some women who had needle aspiration and had to be treated with incision and drainage (*low quality evidence*). All breast abscesses that were treated with incision and drainage healed. We were not able to make any conclusions regarding unwanted effects or complications. Studies did not report sufficiently on the number of follow-up visits, duration of continuation of breastfeeding, post-operative complications, duration of hospital stay and adverse events. However, it appeared that women were more satisfied when treated with needle aspiration.

One study compared different regimens of antibiotics versus no antibiotics in breastfeeding women who were treated with incision and drainage for breast abscesses. We did not find any difference between groups for the outcome resolution of breast abscesses and infections after the procedure.

All of the studies were poorly conducted and/or reported and did not address all of the outcomes that we were interested in. Studies with better design and reporting are needed to properly assess these outcomes.

Authors' conclusions:

There is insufficient evidence to determine whether needle aspiration is a more effective option to I&D for lactational breast abscesses, or whether an antibiotic should be routinely added to women undergoing I&D for lactational breast abscesses. We graded the evidence for the primary outcome of treatment failure as *low quality*, with downgrading based on including small studies with few events and unclear risk of bias.

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Background:

The benefits of breastfeeding are well known, and the World Health Organization recommends exclusive breastfeeding for the first six months of life and continuing breastfeeding to age two. However, many women stop breastfeeding due to lactational breast abscesses. A breast abscess is a localised accumulation of infected fluid in breast tissue. Abscesses are commonly treated with antibiotics, incision and drainage (I&D) or ultrasound-guided needle aspiration, but there is no consensus on the optimal treatment.

Objectives:

To assess the effects of different treatments for the management of breast abscesses in breastfeeding women.

Search strategy:

We searched the Cochrane Pregnancy and Childbirth Group's Trial Register (27 February 2015). In addition we searched African Journals Online (27 February 2015), Google Scholar (27 February 2015), *ProQuest Dissertations and Theses Databases* (27 February 2015*)* and the WHO International Clinical Trials Registry Platform (ICTRP) search portal (27 February 2015). We also checked reference lists of retrieved studies and contacted experts in the field as well as relevant pharmaceutical companies.

Selection criteria:

Randomised controlled trials (RCTs) investigating any intervention for treating lactational breast abscesses compared with any other intervention. Studies published in abstract form, quasi-RCTs and cluster-RCTs were not eligible for inclusion.

Data collection and analysis:

Two review authors independently assessed studies for inclusion, assessed risk of bias and extracted data. Data were checked for accuracy.

Main results:

We included six studies. Overall, trials had an unclear risk of bias for most domains due to poor reporting. Two studies did not stratify data for lactational and non-lactational breast abscesses, and these studies do not contribute to the results. This review is based on data from four studies involving 325 women.

Needle aspiration (with and without ultrasound guidance) versus incision and drainage (I&D)

Mean time (days) to complete resolution of breast abscess (three studies) - there was substantial heterogeneity among these data ($Tau^2 = 47.63$, $I^2 = 97\%$) and a clear difference between subgroups (with or without ultrasound guidance; $Chi^2 = 56.88$, $I^2 = 98.2\%$, P = < 0.00001). We did not pool these data in a meta-analysis. Two studies excluded women who had treatment failure when they calculated the mean time to complete resolution. One study found that the time to complete resolution of breast abscess favoured needle aspiration over I&D (mean difference (MD) -6.07; 95% confidence interval (CI) -7.81 to -4.33; n = 36), but excluded 9/22 (41%) women in the needle aspiration group due to treatment failure. Another study reported faster resolution in the needle aspiration group (MD -17.80; 95% CI -21.27 to -14.33; n = 64) but excluded 6/35 (17%) women in the needle aspiration group due to treatment failure. A third study also reported that needle aspiration was associated with a shorter time to complete resolution of breast abscess (MD -16.00; 95%CI -18.73 to -13.27; n = 60); however, the authors did not indicate the number of women who were lost to follow-up for either group, and it is unclear how many women contributed to this result. Considering the limitations of the available data, we do not consider the results to be informative.

Continuation of breastfeeding, after treatment (success): results favoured the needle aspiration group, but we did not pool data from the two studies because of substantial unexplained heterogeneity ($I^2 = 97\%$). One study reported that women in the needle aspiration group were more likely to continue breastfeeding (risk ratio (RR) 2.89; 95% CI 1.64 to 5.08; n = 60), whereas the other study found no clear difference (RR 1.09; 95% CI 0.97 to 1.22 n = 70).

Treatment failure was more common among women treated with needle aspiration compared to those who underwent I&D (RR 16.12; 95% CI 2.21 to 117.73; two studies, n = 115, *low quality evidence*). In one study,

treatment with needle aspiration failed in 9/22 women who subsequently underwent I&D to treat their breast abscess. In another study, treatment with needle aspiration failed in 6/35 women, who subsequently underwent I&D. All abscesses in the I&D group were successfully treated.

The included studies provided limited data for the review's secondary outcomes. No data were reported for **adverse events**. One study (60 women) reported that women in the needle aspiration group were more **satisfied with their treatment** than women who received I&D to treat their breast abscesses.

Incision and drainage (I&D) with or without antibiotics

One study (150 women) compared the value of adding a broad-spectrum cephalosporin (single dose or a course of treatment) to women who underwent I&D for breast abscesses.

The mean **time to resolution of breast abscess** was reported as being similar in all groups (although women with infection were excluded). Mean time to resolution for women who received a course of antibiotics was reported as 7.3 days, 6.9 days for women who received a single dose of antibiotics and 7.4 days for women who did not receive antibiotics. Standard deviations, P values and CIs were not reported and prevented further analysis. No data were reported for **any continuation of breastfeeding after treatment (success)**. For **treatment failure,** there was no clear difference between the groups of women who received antibiotics (either a single dose or a course of antibiotics) and those who did not (RR 1.00; 95% CI 0.36 to 2.76).

Included studies rarely reported this review's secondary outcomes (including adverse events). For **post-operative complications/morbidity**, there was no difference in the risk of wound infections between the antibiotics and no antibiotics groups (RR 0.58; 95% CI 0.29 to 1.17), irrespective of whether women received a single dose or a course of antibiotics.

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