

Treatment of Thrush in the Breastfeeding Mother and Baby

Executive Summary sheet

If thrush is suspected, having ruled out other causes of nipple and/or breast pain, both mother and baby should be treated effectively and concurrently.

The treatment of choice for topical thrush is:

- Miconazole (Daktarin) cream (2%) applied sparingly to the mother's nipples after every feed
- Miconazole (Daktarin) oral gel (2%) which should be used to cover all surfaces of the baby's mouth four times a day, using a clean finger.*
- If the baby also has a sore bottom, Miconazole cream should be applied at every nappy change.

To prevent re-infection, both mother and baby need to be treated simultaneously, even if only one shows symptoms of thrush.

Treatment for both mother and baby should continue for at least two weeks, although symptoms should be resolving within 2-3 days

The treatment of choice for systemic (ductal) thrush is:

Oral Fluconazole, 150-300mg as a loading dose, followed by 50-100mg twice daily for 14-28 days. Symptoms should start to resolve within 3 days.

The topical treatment listed above should continue concurrently with oral treatment

* In 2008 the manufacturers of Miconazole oral gel altered the summary of product characteristics and recommended that it is not used in babies under 4 months of age. This appears to have been due to incidents of choking on the viscous gel when it was given by teaspoon, instead of as directed here. There has been no suggestion that there are any concerns about the drug itself. This does mean however that the oral gel will have to be prescribed, rather than bought "over the counter", if the baby is under 4 months of age.

Introduction

There is currently no reliable clinical definition of thrush, so the “diagnosis” is made on both the signs and symptoms and by exclusion of other causes.

As well as listening to the mother, and looking at her nipples and her baby, a feed should be observed, to ensure that the way in which the baby is being attached to the breast is not the cause, or a contributory cause, of the pain.

Nipple pain that suddenly appears *after a period of pain free breastfeeding* is often due to thrush. This condition is becoming more common and may be associated with the use of antibiotics.

If the mother has never had a pain free feed, the primary cause is unlikely to be thrush, although thrush may co-exist with other causes of nipple pain. Attention should first focus on improving attachment.

Other causes of nipple pain:

- Eczema
- Dermatitis (including reactions to nipple creams or breast pads)
- Tongue-tie in the baby
- White spot
- Vasospasm
- Reynaud's syndrome
- Bacterial infection (may be present at the same time as thrush)

However, nipple soreness and persistent pain, not relieved by mechanical changes and after a period of pain free feeding, may be due to thrush.

Although there is no reliable clinical definition of thrush¹ it has been suggested that, as with vaginal thrush, aggregate symptoms have a higher predictive value than a single symptom.^{2 3}

Signs and symptoms of topical thrush

Signs of thrush in the mother

- Loss of colour in the nipple or areola
- Pink or red, shiny areola, often evenly distributed around the base of the nipple
- Cracked nipples which don't heal in spite of good attachment
- White plaques on the folds of the nipple or areola skin

Symptoms of thrush in the mother

- Burning sensation in nipples
- Itchy nipples which may also be extremely sensitive to any touch - even to loose clothing

- Nipple pain which:
 - becomes more intense as the feed progresses - and can last for up to an hour after the feed
 - Pain occurring in both nipples (except in the early stages) because the baby transfers the infection during feeding
 - and which does not respond to improved attachment, the application of heat, or alternative methods of milk removal.
- The mother may have a recent history of:
 - Antibiotic therapy ^{2 4 5 6}
 - Nipple trauma ^{2 4}
 - Vaginal thrush ^{2 4}

NOTE: Mother may show no signs of infection or may experience no pain on feeding.

Signs of thrush in the baby:

- White patches (“milk curds”) in the baby’s mouth (inside lower lip or in the cheeks), or on the tongue, which do not rub off easily. (If they are rubbed off, the base is raw and may bleed.)
- Nappy rash (usually red spots or soreness which is difficult to heal)
- Baby keeps pulling off or away from the breast while feeding, seems unhappy or uncomfortable. (Baby’s mouth may be sore.)

NOTE: Baby may show no signs of infection.

Deep breast pain, whenever it occurs, is much more likely to be due to ineffective milk removal, usually by a poorly attached baby, than by ascending, *ductal thrush*. (See below)

Deep breast pain is also unlikely to be due to ductal thrush in the absence of topical thrush.

In the presence of topical thrush, if the mother’s nipples and /or baby’s mouth is sore, attachment may be poor, and this may give rise to deep breast pain.

Treatment of topical thrush

First line treatment for the mother:

Topical treatment: There is accumulating evidence that Azole antifungals are more effective than Nystatin in treating topical thrush. ^{7 8}

Only one, Miconazole, is licensed for use both on the skin and as an oral preparation for neonates. Using this for both mother and baby will obviate the need to wash the preparation off the mother’s nipples before the feed. (Washing of nipples, prior to feeds, is another source of nipple soreness.)

Some health professionals have taken this logic to extremes and advocated the use of oral preparations on the nipple. However Miconazole oral gel (and Nystatin suspension) are not pharmacologically designed to penetrate the skin of the nipple. The application of this form of Miconazole or Nystatin to the breast is unlikely to be helpful.

The small amount of Miconazole cream that the mother applies to her nipple after a feed will be absorbed over time by her breast pad (or clothing). It will thus be necessary to apply it afresh after each feed to keep it in contact with the skin long enough for it to be effective.

If nipples are very inflamed, hydrocortisone (1%) may be used as well.

A combination cream or ointment (Miconazole 2% with hydrocortisone 1%) may also be used.

Second line treatment:

Fluconazole 150-300 mg as a single dose followed by 50-100 mg twice a day for 10 days.

This should be in addition to continuing topical treatment in both the mother and the infant.

First line treatment for the baby:-

The baby should be treated with Miconazole oral gel, which should be used to cover all surfaces of the baby's mouth, using a clean finger. It could be given by dropper, spoon or oral syringe, but the intention should be to keep the gel in contact with the baby's mouth as long as possible, rather than to encourage the baby to swallow it.

The dose for neonates is 2.5mls (24mg Miconazole/ml) twice a day. However a small amount applied with a clean finger, to the inside of the baby's cheeks and lower lip, four times a day, is in line with recent efficacy studies.⁷⁹ This method is likely to keep the gel in contact with the oral mucosa for longer than larger but less frequent doses.

In view of recent efficacy studies,⁷⁹ it would be hard to justify the continued use of Nystatin suspension, unless it was thought that the baby had candida present in his gut as well as his mouth. The dose for neonates is (100,000i.u. /ml) four times a day. If it is given from a spoon rather than using the dropper it may prevent the baby swallowing it too quickly for it to work in the baby's mouth.

To prevent re-infection, both mother and baby need to be treated simultaneously, even if only one shows symptoms of thrush.

Ductal Thrush

Although not universally accepted, mammary candidosis (ductal thrush) is perceived to be a growing problem by lactation professionals ¹⁰

Symptoms of ductal thrush

Pain:

- Persistent
- Severe
- Burning
- Radiating throughout the breast (“deep breast pain”)
- Shooting through the breast and into the back
- Typically during and after feeds

(In spite of efforts to improve attachment)

Treatment of ductal Thrush

Although there is little research evidence, there is growing anecdotal experience that treatment with oral Fluconazole is effective and mothers are enabled to continue pain-free breastfeeding. ¹¹

- The dose of Fluconazole is 150-300mg as a loading dose followed by 50-100mg twice daily for at least 14 days, possibly as many as 28 days. ¹²

Fluconazole is licensed for oral use in infants over six months of age. Neither Fluconazole nor Nystatin is specifically licensed to be given to lactating women.

Fluconazole is however widely prescribed for use in lactating women, (and in preterm babies ^{13, 14} particularly in North America, ¹⁵ and is listed for use in lactating women by WHO. ¹⁶

The amount of Fluconazole the baby would receive via the breastmilk is likely to be less than 5% of the recommended paediatric dose. ¹² The baby will thus need separate therapy to be effectively treated for thrush.

Nystatin tablets 500,000 units have been used as an alternative oral treatment for the lactating women with suspected ductal thrush. However the poor absorption from the gut results in delay in achieving resolution of symptoms and re-occurrence of thrush is more likely. ¹⁷

When using oral treatment it is still important to continue to apply cream to the nipples after every feed, and to treat the baby’s mouth four times daily.

Sometimes mothers report residual pain after treatment - if the pain is severe they may need to have a longer course or higher dose of Fluconazole, particularly if symptoms have been present for some time.

The mother may need analgesia until symptoms improve to enable her to cope with the severe pain caused by thrush.

When to investigate

Swabs are not usually required but standard bacteriology swabs may be taken for microscopy and culture if:

- The diagnosis is unclear, or bacterial infection is suspected.
- There is no improvement after initial treatment.
- Systemic treatment is considered.¹⁸

However:

- At least 50% of lactating women will have Staph Aureus on their nipples, many without symptoms;¹
- Staph Aureus and Candida can co-exist
- Standard charcoal skin swabs identified only around 10% of Candida infections in a recent prospective cohort study¹
- The detection rate in human milk is even lower, probably due to the presence of lactoferrin in milk^{1, 19}

Thus swabbing is unlikely to be cost effective or helpful.

Other considerations

Thrush can survive outside the body for at least 24 hours, in moist warm conditions²⁰. It can survive on clothing even when laundered at 50°C²¹. It survives in hand creams (and other oil-in-water emulsions), eye make up and toothbrushes. Although it grows well at a pH of 4.5, it can grow at a pH of less than 2 or as high as 8².

- Non-disposable items that come into contact with the mother or baby should be boiled for at least 10 minutes, or soaked in dilute sodium hypochlorite solution (bleach), daily.
- Articles should be thoroughly washed and rinsed before being placed in hypochlorite solution, as organic matter inactivates dilute solutions.

The length of time the articles need to remain in solution will depend on the concentration of the solution. (A 1% solution, equivalent to 10,000ppm of available chlorine, will destroy candida in 10 minutes^{23, 24}).

Milton Fluid, as supplied to retail outlets, is twice this strength at 2% sodium hypochlorite. Diluted in accordance with the manufacturer's instructions (15mls to every 4 pints (2.3 litres) it is recommended that articles remain submerged for 30 minutes²⁵

Mothers should be advised that:

- Thrush can be passed between the mother and baby - and other family members

- Thorough hand washing is recommended after applying medication and following each nappy change
- A separate towel should be used for each person in the family and it should be changed daily
- Clothes should be machine washed at a temperature of at least 60°C
- If the baby is also sucking on a dummy, bottle teat, nipple shield or plastic toys, these will also need to be carefully washed and sterilised
- If the mother has expressed milk and saved it in the freezer during the time that she or her baby had thrush, it might be better not to use it as it might cause re-infection.

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