Guideline

Infant Feeding - Breast and Nipple Thrush

1. Purpose

This guideline provides details for the diagnosis and management of women with breast and nipple thrush (*Candida*) at the Women's.

This guideline/procedure is related to Breastfeeding Policy

2. Definitions

Breast and nipple thrush is the over-growth of *Candida* species, on the nipples and in breast ducts, which can cause significant breast and nipple pain. There are over 20 species of *Candida* of which *Candida albicans* is the most common.

3. Responsibilities

Maternity and neonatal medical, nursing and midwifery staff need awareness of the condition and to refer women to appropriate care.

Lactation consultants and medical staff should be aware of the guideline and be able to treat accordingly.

4. Guideline

4.1 Breast and nipple thrush diagnosis

The diagnosis of breast or nipple thrush is usually made after consideration of the mother's symptoms; for example, mother may complain of 'nipple pain' that does not resolve despite improved attachment of the baby to the breast. The pain of maternal thrush infections may lead to early weaning, which can be avoided with early diagnosis and treatment.

There may be a history of antibiotic treatment preceding thrush symptoms. This may have been prescribed postnatally, for example, to prevent infection following a caesarean section birth or for mastitis. The mother may have a past history of vaginal thrush.

Nipple trauma commonly precedes nipple thrush symptoms. It is assumed that the break in the skin allows organisms to enter.

4.2 Signs and symptoms

Nipple/areola

- Mother may describe burning, stinging nipple pain which continues during and after the feed.
- The nipples are often very tender to touch and even light clothing can cause pain
- Nipples may appear pink and/or shiny and areola may be reddened, dry or slightly flaky.
- Consider dermatitis if significant itching and or rash. Refer to RWH guideline: Nipple Eczema/Dermatitis
- If nipple pain is exacerbated by cold and/or nipples blanch consider nipple vasospasm. Refer to guideline: Nipple and Breast pain in Lactation which includes algorithm.

Breast

- Mother may describe shooting, stabbing, or deep aching breast pain. Pain may also be felt radiating into the back or down the arm. The breast pain typically occurs after feeding or expressing. The let-down reflex may be more painful than normal.
- The pain may be localised to one nipple or breast or may be bilateral.
- Breasts will appear normal. If inflamed, consider mastitis. Refer to guideline: Mastitis and Breast Abscess

Baby

- The baby may have signs of thrush such as white oral plaques in the mouth (tongue and inside cheeks) or red papular rash with satellite lesions around the anus and genitals. Although these signs are not always present, it should be assumed that the baby is colonised with the organism if the mother has evidence of nipple thrush.

Once diagnosis of nipple and or breast thrush has been made then both mother and baby should be treated at the same time to prevent re-infection.

4.3 Treatment

Parental hand cleaning with an alcohol-based hand sanitizer after nappy changes may be helpful to reduce the risk of transmission.

Baby

Baby's mouth: Use miconazole oral gel (Daktarin®) 4 times a day for 1 week, then once daily for 1 week after signs/symptoms resolve.

Use the spoon to measure a ¼ teaspoon dose. The spoon **should not** be used for administering the gel. Using a clean finger, apply small amounts of gel at a time to the inside cheeks and over the tongue.

Note: In May 2006, Janssen-Cilag (the manufacturers of Daktarin® gel) issued an alert advising pharmacists not to supply Daktarin® (miconazole) oral gel for use in infants less than 6 months of age. This alert originates from concerns regarding the administration of the gel, not the medication itself. Health care providers must ensure, when recommending this product, that the client understands how to administer the product safely (see administration above).

If the client/ mother is unsure about how to use the gel or is unable to purchase the product from her pharmacy, she can be advised to try another pharmacy or to use nystatin oral drops (see below). However, it should be noted that the drops are not as effective for oral thrush in infants as the gel.

Dummies, if being used should be sterilised daily.

Mother

Topical

- Nipple treatment for mother: miconazole oral gel/cream or nystatin cream applied to nipples after each feed (or 3-4 hourly during the day). It is not necessary to wipe the gel/cream from the nipples before the next breastfeed.

Oral

- <u>If nipple pain only,</u> fluconazole 150 mg capsules, one capsule every second day for 3 doses, followed by course of oral nystatin (quantity prescribed: 50) 2 tablets/capsules 3 times per day preferably with food.
- If nipple pain persists, consider a further course of fluconazole 150mg capsules, either one capsule every second day for 3 doses or one capsule daily up to 10 days (available only on private prescription), followed by a further course of oral nystatin (2 tablets/capsules 3 times per day preferably with food (quantity prescribed: 50);
- <u>If nipple AND breast pain</u>, fluconazole 150 mg capsules, one capsule every second day for 3 doses, plus a repeat prescription for a further course of fluconazole. If pain is not significantly reduced after the first 3 fluconazole capsules, then the repeat prescription of fluconazole should be filled to have another course of 150mg fluconazole every second day for 3 doses, followed by course of oral nystatin (2 tablets/capsules 3 times per day preferably with food (quantity prescribed: 50).

See Appendix: Candida guide in nipple and breast pain (algorithm)

If breast pain not resolving

- If breast pain does not respond to fluconazole reconsider the diagnosis or consider oral nystatin capsules (an authority prescription can be written for one month's supply, if appropriate).

If nipple pain is not resolving:

- Consider gentian violet 0.5% aqueous paint (see below)See Appendix: Candida guide in nipple and breast pain (algorithm)

Miconazole oral gel (Daktarin®)

Miconazole oral gel is an antifungal agent with poor oral absorption (~25 - 30%). When applied topically onto the nipples, miconazole has minimal systemic absorption (0.1%). The first line treatment of nipple thrush is direct application of gel to nipples and to baby's mouth.

Possible side effects and drug interactions of miconazole gel

Mother: gel may irritate skin; if irritation occurs, cease using gel. Consider changing to miconazole cream or nystatin cream. It is not necessary to wipe the cream from the nipples before the next breastfeed.

Baby: may cause some babies to gag or vomit. Consider changing to nystatin oral drops - apply 1mL in buccal cavity four times per day.

Miconazole interacts with many medicines, such as warfarin, oral sulfonylureas, calcium channel blockers, phenytoin.

Nystatin (Nilstat®, Mycostatin®)

Nystatin is an antifungal agent used in the treatment of thrush (candidiasis) and is available as topical preparations and oral preparations such as tablets or capsules. Oral absorption is poor with undetectable plasma levels following oral doses.

Dose:

Nystatin drops: (brand names: Nilstat®, Mycostatin®)

Baby - apply 1mL to mouth four times a day for one week then once a day.

Nystatin topical cream: (brand names Mycostatin)

Nipples - apply after feeds (at least 4 times a day).

Nystatin 500,000 unit tablets or capsules:

Oral (mother) - 2 tablets/capsules three times a day (preferably with food) for a course of 50 tablets

Possible side effects of nystatin:

Mother - bad taste in mouth, diarrhoea, nausea, vomiting

Baby - None reported (commonly used in infants)

Possible drug interactions: None noted

Fluconazole (Diflucan®)

Fluconazole is an antifungal agent commonly used for systemic candida infections. Oral absorption is high at

>90%, with peak plasma concentrations occur 1 - 2 hours after the dose. Plasma half-life is approximately 30 hours.

Dose: See under 4.3 Treatment

Possible side effects and drug interactions of fluconazole

Mother - Fluconazole is generally very well tolerated. Reported side effects include: vomiting, diarrhoea, abdominal pain and skin rashes.

Baby - No complications have been reported from exposure via breastmilk.

Fluconazole may increase the concentration or effect of many medicines including ciclosporin (cyclosporin), zidovudine, rifabutin, theophylline, oral hypoglycemics, warfarin and phenytoin. Rifampicin and cimetidine can reduce the fluconazole plasma level (see product information for further detail). Fluconazole is known to prolong the QT interval, and therefore is not recommended to be taken concurrently with domperidone, or other medicines that contribute to QT prolongation.

Gentian Violet 0.5% Paint

Gentian violet is a topical antifungal and antibacterial agent. It is effective against fungi (such as Candida species) and bacteria (such as Staphylococcus species).

Currently, gentian violet has a place in the treatment of nipple thrush when other treatment options have failed.

Use of gentian violet:

Available as a 0.5% aqueous paint. A prescription is required for this preparation and can be made up in some pharmacies on request. E.g. Royal Women's Hospital, Monash Medical Centre and compounding pharmacies.

This paint is applied twice a day to the nipples using a cotton bud. Breastfeed the baby **before** each application.

The recommended duration is up to 7 days.

Contra-indications for use:

- Hypersensitivity to gentian violet
- On ulcerative lesions, open or broken wounds
- In patients with porphyria

Note: Gentian violet is a purple dye and may stain any material it comes into contact with eg: bathroom basin, clothing.

Side effects:

Gentian violet is generally well tolerated, however side effects have been reported:

- Temporary staining of the skin and clothing
- Overuse can result in gentian violet present in baby's mouth and consequently can cause ulceration of the mouth and throat
- Skin irritation such as contact dermatitis.

Concerns

Gentian violet use is restricted to application to unbroken skin because of concerns about carcinogenicity and mutagenicity effects shown in animal studies. This research involves rats and mice that were fed large quantities of gentian violet over a period of time. An increased rate of cancer was found to have occurred in these animals. This has not been reported when used on the skin in humans but its use should be limited to nipples where other antifungal treatments have failed.

Important: Store in a safe place away from children and discard after 1 week.

5. Evaluation, monitoring and reporting of compliance to this guideline

Compliance to this guideline or procedure will be monitored, evaluated and reported through review of clinical practice in the Breastfeeding Service.

All guidelines or procedures must have compliance measures developed and implemented.

6. References

Amir, L. H., & Bearzatto, A. (2016). Overcoming challenges faced by breastfeeding mothers. *Australian Family Physician*, *45*(8), 552.

Amir, L. H., Donath, S. M., Garland, S. M., Tabrizi, S. N., Bennett, C. M., Cullinane, M., & Payne, M. S. (2013). Does Candida and/or Staphylococcus play a role in nipple and breast pain in lactation? A cohort study in Melbourne, Australia. *BMJ Open*, *3*, e002351.

Berens, P., Eglash, A., Malloy, M., & Steube, A. M. (2016). ABM Clinical Protocol# 26: Persistent pain with breastfeeding. *Breastfeeding Medicine*, *11*(2), 46-53.

Moorhead AM, Amir LH, O'Brien PW, Wong S (2011): A prospective study of fluconazole treatment for breast and nipple thrush. *Breastfeeding Review*, 19(3):25-29.

Walker M: Maternal Pathology: Breast and Nipple Issues (2011) In: *Breastfeeding Management for the Clinician: Using the Evidence.* 2nd edn. Sudbury, Massachusetts: Jones and Bartlett Publishers.

Wiener S (2006). Diagnosis and management of *Candida* of the nipple and breast. J*ournal of Midwifery and Womens Health,.* 51(2):125-8.

Yildirim, M., Sahin, I., Oksuz, S., Sencan, I., Kucukbayrak, A., Cakir, S., & Ozaydin, C. (2014). Hand carriage of Candida occurs at lesser rates in hospital personnel who use antimicrobial hand disinfectant. *Scandinavian Journal of Infectious Diseases*, *46*(9), 633-636.

7. Legislation/Regulations related to this guideline

Not applicable.

8. Appendices

Appendix 1: Candida Guide in Nipple or Breast (Algorithm)

Appendix 1

Infant Feeding - Candida Guide in Nipple or Breast (Algorithm)

the women's
the royal women's hospital
victoria australia

Candida guide in nipple and breast pain (algorithm)

For women with likely diagnosis of nipple/breast Candida (stinging, burning, nipple pain, shooting, radiating intermittent breast pain)