Mastitis and Breast Abscess

1. Purpose

This document outlines the guidelines for pharmacological and non pharmacological management of mastitis and breast abscess at the Women's. This guideline is related to the RWH Breastfeeding Policy. http://intranet.thewomens.org.au/BreastfeedingPolicy

2. Definitions

Mastitis is an inflammation of the breast tissue which may or may not be associated with a bacterial infection.[2] In infective mastitis, *Staphylococcus aureus* is the most common pathogen. Less commonly, the pathogen may be a *beta-haemolytic Streptococcus* (such as Group A or Group B streptococcus) or *Escherichia coli.* Community-acquired methicillin-resistant *S. aureus* (MRSA) is increasingly being identified as the causative pathogen,[3] although rates of MRSA remain relatively low in most parts of Australia.[4]

Breast abscess is a collection of pus in the breast, which may occur as a complication of mastitis.

3. Responsibilities

All staff involved with the diagnosis and management of mastitis must be aware of this guideline to ensure the safe and appropriate management of mastitis and breast abscess. This includes doctors, lactation consultants, midwives, nurses and pharmacists.

4. Guideline

4.1 Incidence

The reported incidence of mastitis varies from 10 to 20% in the first six months postpartum.[1, 5-6] Most episodes of mastitis occur in the first eight weeks postpartum, but mastitis can occur at any time during breastfeeding.[1] About 3% of women with mastitis will develop a breast abscess.[7]

4.2 Risk factors

Risk factors for mastitis:

- Incomplete breast drainage due to:
    - Poor positioning and attachment
    - Missed feeds or long intervals between feeds
    - Tongue-tie
- Restrictive clothing/external pressure on the breast
- Trauma to breasts or nipples
- Engorgement and/or chronic oversupply
- Unresolved blocked ducts or white spot on the nipple (blocked nipple pore)
- Rapid or abrupt weaning
- Stress, fatigue, overall poor health and nutrition
- Previous history of mastitis

Risk factors for breast abscess:

- Inadequately treated mastitis
- Abrupt weaning during an episode of acute mastitis

4.3 Management of mastitis

Refer to appendix 1 for 'Assessment and management of lactating women presenting with breast pain and possible mastitis' algorithm.

Diagnosis

The diagnosis of mastitis should be based on clinical symptoms and signs of inflammation. The following signs and symptoms may develop rapidly.

Breast

- Red, swollen and painful area in the affected breast
- Skin may appear shiny and tight with red streaks

General

- Flu-like symptoms: lethargy, headache, myalgia, nausea and anxiety
- Fever (temperature >38^{o}C)

Investigations

Routine investigations are not necessary. Investigations should be initiated if:

- Mastitis is severe
- There is inadequate response to first line antibiotics or
- Hospital admission is required

Investigations for severe mastitis, not responding to first-line antibiotics or requiring admission should include:

- Breastmilk culture and sensitivity: hand-expressed midstream clean catch sample into sterile container (i.e. a small quantity of the intitially expressed milk is discarded to avoid contamination with skin flora)[8]
- Full blood count (FBC)
- C-reactive protein (CRP)

Other investigations to consider:

- Blood cultures should be considered if temperature > 38.5C
- Diagnostic ultrasound if an abscess is suspected.

Treatment of mastitis

- Treatment should begin immediately
- Maintain breastfeeding; mastitis is not an indication for, nor an appropriate time to wean

Non-pharmacological treatment

Effective drainage of breastmilk by breastfeeding and/or expressing is essential to maintain adequate milk supply and to reduce the risk of breast abscess formation.

If presenting symptoms are mild and localised, the woman may consider enhancing breastmilk drainage:

- Physiological methods (e.g. expressing, massage and breastfeeding) to resolve the mastitis without the use of antibiotics
- Ensure correct positioning and attachment and frequent and effective milk removal
- Apply warmth to assist with let-down reflex and therefore milk flow and breast drainage
- Apply cold pack after feeds to reduce pain and oedema
- Avoid restrictive clothing/bra

- Refer to Lactation Consultant for appropriate feeding assessment and advice
- The woman will need rest, adequate fluids and good nutrition and practical domestic help if possible

Pharmacological treatment

Breastfeeding women are often reluctant to take medicines; women should be reassured that the medicines listed in this guideline are compatible with breastfeeding.

Analgesia

Paracetamol is considered safe to be used by breastfeeding mothers. It is usually the medicine of choice for short-term analgesia and anti-pyretic. Maximum paracetamol dose is 4g per 24 hours.

Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen may be effective in reducing symptoms relating to inflammation. It can be safely used while breastfeeding as only small amounts of ibuprofen are excreted into breastmilk.

Antibiotics

If symptoms are not resolving within 12 to 24 hours with physiological methods or if presenting symptoms are moderate or severe, antibiotic treatment may be required (in conjunction with non-pharmacological measures).

Oral antibiotics should be continued for at least 5 days. Improvement should be seen within 2 to 3 days of antibiotic treatment. If improvement is slow, milk should be collected for culture and sensitivity.

Any baby whose mother is on antibiotic therapy should be monitored for systemic effects such as changes to the gastro-intestinal flora (with symptoms such as diarrhoea, vomiting and thrush) or skin rashes.

Women who are very unwell and/or have signs of systemic sepsis may need to be admitted for intravenous (IV) antibiotics. IV antibiotics should be continued for at least 48 hours or until substantial clinical improvement is seen.

Flucloxacillin or dicloxacillin are the antibiotics of choice for mastitis according to the Australian Therapeutic Guidelines (Antibiotic) 2010.[9] Both antibiotics are compatible with breastfeeding. Small amounts of flucloxacillin or dicloxacillin are excreted into breastmilk but the concentration is probably too low to have a significant effect on the breastfed infant.

First generation cephalosporins are also effective as first-line treatment for patients hypersensitive to penicillin (excluding immediate hypersensitivity)[9]. Small amounts of cephalexin are excreted into breastmilk but they are unlikely to have a therapeutic effect on the breastfed baby.

Clindamycin is recommended for women with immediate penicillin hypersensitivity.[9] One case of bloody stool in a breastfed baby has been reported.[10]

Vancomycin is used as an alternative antibiotic for patients with serious allergy to penicillin and cephazolin. Only small amounts of vancomycin are excreted into breastmilk and it is poorly absorbed and unlikely to cause any serious adverse effects in the breastfed baby.

Lincomycin is used as an alternative antibiotic for patients with serious allergy to penicillin and cephazolin. Only small amounts of lincomycin are excreted into breastmilk and unlikely to cause any serious adverse effects in the breastfed baby.

In Australia, community-acquired MRSA is often sensitive to non-β lactam antibiotics such as macrolides, tetracylines and trimethoprim-sulfamethoxazole.[11]

Trimethoprim with sulfamethozazole, also known as co-trimoxazole, may be an alternative treatment against Methicillin-Resistant Staphylococcus aureus (MRSA)[11]. It is excreted into breastmilk and is and unlikely to cause any serious adverse effects in the breastfed baby.

See table 1 for Recommended antibiotic regimen

Table 1 Recommended antibiotic regimen

Recommended antibiotic regimen[9]			
All listed antibiotics are compatible with breastfeeding			
First Choice			
Route	Drug	Side effects	Comments
Oral	Flucloxacillin (or dicloxacillin) 500mg 6 hourly for at least 5 days	Common – nausea, diarrhoea, rash Rare – anaphylactic shock, cholestatic jaundice	Monitor hepatic function if treatment continues for > 2 weeks, especially if there are other risk factors.
IV	Flucloxacillin (or dicloxacillin) 2g 6 hourly		
If allergic to penicillin (exclude immediate hypersensitivity):			
Route	Drug	Side effects	Comments
Oral	Cephalexin 500mg 6 hourly for at least 5 days	Common – nausea, diarrhoea, rash Rare – anaphylactic shock	Cephalexin is usually prescribed for mastitis in women with a history of hypersensitivity to penicillin. About 3-6% of individuals with penicillin hypersensitivity have a cross-reaction to cephalosporins
IV	Cephazolin 2g 8 hourly		
If there is a history of immediate penicillin hypersensitivity:			
Route	Drug	Side effects	Comments
Oral	Clindamycin 450mg 8 hourly for at least 5 days	Common – diarrhoea, nausea, vomiting Rare – anaphylaxis, blood dyscrasias, jaundice	Used as a second choice when individuals cannot tolerate usual therapy.
IV	Lincomycin 600mg 8 hourly (clindamycin IV not available at the Women's)		
IV	Vancomycin 1.5g 12 hourly	Common– thrombophlebitis (IV) Rare –serious skin reactions.	Only use if pathogen is resistant to first-line antibiotic therapy.
If community acquired methicillin-resistant *S. aureus* (MRSA) mastitis is suspected :			
Route	Drug	Side effects	Comments
Oral	Clindamycin 450mg 8 hourly for 5 days	Common – diarrhoea, nausea, vomiting Rare – anaphylaxis, blood dyscrasias, jaundice	Observe the breastfed baby for diarrhoea, thrush or allergic reaction.
Oral	Trimethoprim+sulfamethoxazole 160+800 mg 12 hourly for 5 days	Common–Nausea, vomiting, anorexia and allergic skin reactions.	Use with extreme caution in breastfeeding mother with a preterm or critically sick baby and babies with G6PD deficiency.

4.4 Management of breast abscess

Diagnosis

In addition to the signs and symptoms of mastitis, there may be increased localised swelling, pain and tenderness at the site of the abscess. Women with an encapsulated abscess may present with no systemic symptoms but will present with a breast lump and usually describe a recent episode of mastitis.

Clinical examination alone may not be sufficient to exclude or confirm an abscess. The diagnosis and location should be confirmed by diagnostic ultrasound.

Treatment

Women with a breast abscess need to be referred without delay to a breast surgeon. The preferred management is needle aspiration, however surgical drainage is required in some cases.

Ensure breastmilk and pus aspirate are collected for culture and sensitivity.

Continuation of breastfeeding or breastmilk expression is both safe and recommended. The presence of a breast abscess is not an indication for, nor an appropriate time to wean.

Management of breastfeeding following aspiration/surgical drainage

Management of breast abscess following aspiration/surgical drainage is as per management of mastitis.

Positioning of the baby may need to be modified to avoid pressure on the aspiration/ incision site or interference with drain tube if in-situ.

If the baby is unable to feed directly from the affected breast, the breast should be kept well drained by frequent and effective expressing until the mother is able to resume breastfeeding from that breast.

Breastmilk leaking from the incision site is not uncommon and will not prevent healing.

Refer to appendix 1 for 'Assessment and management of lactating women presenting with breast pain and possible mastitis' algorithm

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

Compliance to this guideline will be monitored, evaluated and reported through the following:

- Breastfeeding Service Lactation Consultants when called to provide consultations for women presenting to the Womens with mastitis will review the documented treatment plan to determine consistency with this guideline.
- Where a treatment plan does not comply with this guideline, the LC will complete a clinical incident (Riskman) report.
- The Breastfeeding Service will review all reported clinical incidents of non-compliance reported through the clinical incident (Riskman) program and develop an action plan to address issues as required.

6. References

1. Amir LH, Forster DA, Lumley J, McLachlan H. A descriptive study of mastitis in Australian breastfeeding women: incidence and determinants *BMC Public Health* 2007;7:62.

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11. Chua K, Laurent F, Coombs G, Grayson ML, Howden BP. Antimicrobial resistance: Not community-associated methicillin-resistant Staphylococcus aureus (CA-MRSA)! A clinician's guide to community MRSA - its evolving antimicrobial resistance and implications for therapy. *Clin Infect Dis* 2011;52(1):99-114.

7. Legislation/Regulations related to this guideline or procedure

Not applicable

8. Appendices

Appendix 1: 'Assessment and management of lactating women presenting with breast pain and possible mastitis' algorithm

Appendix 2: Mastitis: Consumer Fact Sheet

Appendix 1

Assessment and Management of Lactating Women Presenting With Breast Pain and Possible Mastitis Algorithm

the women's
the royal women's hospital