Mastitis - Lactation
Maternity and Primary Care Services Lothian Guidelines

1 INTRODUCTION:

Lactation mastitis is an inflammatory condition of the breast, which encompass a spectrum of conditions, which may or may not be accompanied by infection. The inflammation of the mammary gland most often presents in a segmental distribution of the ducts, alveoli and surrounding connective tissue. The spectrum includes ductal narrowing, inflammatory mastitis, bacterial mastitis, phlegmon (ill-defined fluid collection), abscess, galactocele (milk collection in a cyst like cavity) and subacute mastitis. These may or may not be accompanied by infection. Breast abscess, a localised collection of pus within the breast, and sepsis are severe complications of mastitis. Mastitis is usually associated with lactation but can also occur in non-lactating women. The incidence of lactation mastitis is reported to be between 10% to 33% of breastfeeding women; it is most common within the first 2-3 weeks postpartum. Abscess is reported to occur in 3% to 11% of women with mastitis; it is most common during the first six weeks postpartum.

Research demonstrates that multiple factors contribute to the development of mastitis, such as hyperlactation, microbial factors and medical factors. The lactating breast is a dynamic gland that responds to internal and external hormonal stimulation. Common organisms in lactational mastitis include Staphylococcus (S. aureus, S. epidermidis, S. lugdunesis, and S. hominis) and Streptococcus (S. mitis, S salivarius, S.pyogenes, and S. agalactiae). When treated appropriately women will make a rapid and complete recovery.

2 AIM:

To reduce the incidence of lactation mastitis and the spectrum of conditions by providing an evidence based resource to help staff make an early diagnosis and initiate appropriate management.

3 GUIDELINES:

3.1 Diagnosis

Signs and symptoms of mastitis:

- A localised area of tenderness, erythema, firmness and or swelling in the breast.
- Pyrexia and/or flu-like symptoms

Suspect a breast abscess if:

- There is a history of recurrent mastitis, prior breast abscess, bacterial mastitis of phlegmon.
- A palpable swollen, fluctuant lump within the breast which is warm and tender to touch with red discolouration of the skin
- Fever/general malaise
- Systemic symptoms that resolve and recur as body walls of the infectious process
- Systemic symptoms that worsen until abscess is drained

Differential diagnosis:

Associated with lactation:

- Full or engorged breasts, some symptoms of early postpartum engorgement can be similar to early inflammatory mastitis however engorgement presents as bilateral pain and firmness or oedema usually between day 3-5 postpartum but onset can be as late as day 9-10 postpartum
- Blocked duct
- Infection of the mammary duct

Not associated with lactation:

- Breast cancer
- Duct ectasia
- Cellulitis
- Fibroadenosis
- Necrotising fasciitis of breast
- Ruptured breast cyst
- Fat necrosis of the breast

Precipitating factors:

- Engorgement, caused by ineffective emptying of the breast, usually due to suboptimal attachment or positioning
- Ineffective feeding, reduction in feeds/expressing, use of dummy/bottle
- Pressure on the breast e.g. tight clothing or prone sleeping
- Sore, cracked nipples, usually caused by suboptimal attachment or positioning
- Smoking
- Immunosuppression
- Age – women 21-35 are more likely to develop mastitis

Prevention of engorgement: Engorgement is related to interstitial oedema and will present as bilateral breast pain, firmness and swelling. This usually occurs between days 3 and 5 postpartum but can be as late as day 9-10.

- Good positioning and attachment technique
- Unrestricted feeding
- Help with feeding & expressing if baby not yet feeding effectively
- If breasts become overfull at any time, mother should always express enough milk to soften the breasts until she is comfortable – it is not necessary to empty the breasts

Management of engorgement:

Feed baby and/or express **every 3-4 hours until breasts are comfortable –** then follow prevention of engorgement advice above. If not able to empty breasts, mother should seek help urgently from her

- Midwife
- Health Visitor/ Family Nurse Partnership (FNP)
- Local Breastfeeding Support Group
- Specialist Breastfeeding Service, see Appendix 1 for contact details

Supportive care and measures which may help:

- Warm shower or bath, warm compresses
- Light sweeping of the skin can support lymphatic drainage. Deep breast massage is not recommended
- Hand expressing may cause less trauma to a tender breast than using a pump
- Non-steroidal anti-inflammatory medication may help reduce swelling and allow milk to flow more readily (e.g. ibuprofen 400 mg orally 6-8 hourly initially, then 8 hourly as required once pain and localised swelling improves)
- Between feeds, ice or cold compress can be applied

3.2 Management of lactation mastitis in primary care:

In an early stage, when signs and symptoms of mastitis have been present for less than 12 to 24 hours, it may be possible to manage the condition without antibiotics as follows:

- Ensure women has a full breastfeeding assessment by a midwife/HV/FNP to ensure effective positioning and attachment at the breast (see Appendix 2- breastfeeding assessment tool)
- Support women to continue to feed from both breasts
- If unable to breastfeed advise women to express sufficient milk to match the needs of her baby
- Advise women to rest and not wear a bra, especially at night

There should be a low threshold for using antibiotics where infection is suspected after 12-24hrs. Breastfeeding should continue frequently (e.g. breastfeeding 8 to 12 times per day) to promote effective milk removal. If these measures do not result in an improvement in symptoms within 24 hours, or if symptoms are severe or if there are any signs of systemic infection continue (as per above) and start antibiotics as follows:

Antibiotic treatment in primary care

Early recognition and treatment may prevent complications such as breast abscess. Antibiotic therapy is based initially on likely pathogens. In cases of failure of initial treatment or where complications arise, cultures may be indicated, and treatment may have to be altered depending on the specific pathogens isolated and corresponding antibiotic susceptibilities.

	Drug/Dose/Route/Frequency	Penicillin Allergy	Duration
1st line	Flucloxacillin, Oral 1g Four times daily	Clarithromycin, Oral 500mg Twice daily	7 Days - if no improvement after 7 days see treatment course below.

Treatment course: 7 days depending on clinical response. Infections should begin to respond within 48 hours. If the infection is worsening despite oral antibiotics then seek help from obstetricians, breast unit surgeons or microbiologist, see Appendix 1 for details. Send a swab of the breast and a MRSA screen if there are risk factors for MRSA infection.

Safety of continuing to breastfeed:

- **Mother** - stopping breastfeeding during an attack of mastitis does not help the mother recover and on the contrary, there is a risk that it can make her condition worse. Regular softening of the breast by feeding and/or expressing is essential to promote rapid recovery. Mothers who wish to stop lactating can be safely helped to do so once the mastitis is resolved.
- **Baby** – continuing to breastfeed is generally safe, even in the presence of *S. aureus*.

3.3 Referral to hospital

- **Up to 6 weeks postnatal** - refer to St John's or Simpson Centre maternity hospitals (Appendix 1)
- **Beyond 6 weeks postnatal** – refer to Breast Unit at Western General Hospital (Appendix 1)

Consider referral in the following postnatal women:

- Mother is very unwell / has signs of sepsis
- The infection is progressing rapidly
- The woman is haemodynamically unstable
- An abscess is suspected
- An episode of mastitis does not settle with one course of antibiotics
- A second episode of mastitis occurs
- MRSA is suspected (seek advice from microbiologist at RIE on 0131 5363373 during “office hours” or via hospital switchboard 0131 536 1000).

Management of lactation mastitis in hospital (secondary care):

Women with symptoms of lactation mastitis may be septic, so **must be assessed promptly on arrival at hospital**:

- Complete risk assessment for venous thromboembolism
- Management of Sepsis– follow **Sepsis in Obstetrics Guideline**
    - Blood cultures and culture of the milk are indicated during severe infection or if the infection is hospital acquired and/or fails to improve to empirical treatment.

Antibiotic treatment - IV antibiotics are required if patient is pyrexial - use the regimens below:

Drug	Dose/Route/Frequency	Duration	Penicillin allergy	Duration
Flucloxacillin*	2g, IV, 6 hourly	7 days	Vancomycin* as per online calculator. Ensure vancomycin levels are within therapeutic range trough levels 15-20mg/L	7 days

*Metronidazole can be added if signs of abscess- 400mg Oral, 8 hourly
(500mg IV, 8 hourly if oral route not available). Refer to breast unit if abscess suspected.

The clinical condition should have improved after 24 hours of intravenous antibiotics, if not consult microbiology for advice. It should almost always be possible to convert to oral antibiotics by 48 hours.

IV to oral switch - Flucloxacillin oral 1g four times a day (to complete 7 days including IV)
For Penicillin allergic patients - Clarithromycin oral 500mg twice daily (to complete 7 days including IV)

If the patient is not responding to IV antibiotics, consider ultrasound, exclude abscess and MRSA infection (Contact Microbiology if MRSA is isolated on 0131 536 3373 during “office hours” or via hospital switchboard 0131 536 1000).

If an abscess is suspected:

- Refer to Breast Unit Team at Western General Hospital (Appendix 1)

Arrange an urgent 2-week referral to the Breast Unit if an underlying mass or breast cancer is suspected.

Prevention of further episodes of lactation mastitis:

- Ensure a full breastfeeding assessment is carried out (see Appendix 2) and the woman is aware of effective positioning and attachment
- Encourage women to follow baby's feeding cues and avoid missing feeds – if supplementing with expressed breast milk of formula milk should express to maintain milk supply and milk flow
- Offer referral to specialist breastfeeding support services if required, see Appendix 1 for referral process
- Ensure the community midwife/ health visitor/ family nurse has been informed of treatment plan prior to discharge from hospital

4 ASSOCIATED DOCUMENTS:

Sepsis in Obstetrics Guideline

5 REFERENCES:

1 www.acog.org. (n.d.). *Breastfeeding Challenges*. [online] Available at: https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/02/breastfeeding-challenges.

2 bestpractice.bmj.com. (n.d.). *Mastitis and breast abscess - Symptoms, diagnosis and treatment | BMJ Best Practice*. [online] Available at: https://bestpractice.bmj.com/topics/en-gb/1084.

3 Dixon, J.M. and Khan, L.R. (2011). Treatment of breast infection. *BMJ*, 342(feb11 1), pp.d396–d396. doi:https://doi.org/10.1136/bmj.d396.

4 Mitchell, K., Johnson, H., Rodríguez, J., Eglash, A., Scherzinger, C., Zakarija-Grkovic, I., Cash, K., Berens, P. and Miller, B. (2022). *Academy of Breastfeeding Medicine Clinical Protocol #36: The Mastitis Spectrum, Revised 2022*. [online] Available at: https://www.bfmed.org/assets/ABM%20Protocol%20%2336.pdf.

5 NICE (2021). *Mastitis and Breast Abscess*. [online] NICE. Available at: https://cks.nice.org.uk/topics/mastitis-breast-abscess/.

6 www.sps.nhs.uk [online]Available at Using macrolide antibiotics during breastfeeding – SPS - Specialist Pharmacy Service – The first stop for professional medicines advice

6. AUTHOR/S:

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7. APPENDICES:

Appendix 1: Details of referral hospitals and microbiologists
Appendix 2: Breastfeeding Assessment Tool

Appendix 1: Referral hospitals in Lothian – management of lactation mastitis

Postnatal women

- **Up to 6 weeks postnatal** - refer to St John's hospital or Royal Infirmary Edinburgh (contact details below)
- **Beyond 6 weeks postnatal** – refer to Breast Unit at Western General Hospital

Simpson Centre for Reproductive Health, Edinburgh (0131 536 1000)

- Phone switchboard and bleep on call Obstetric Registrar, or
- Phone Triage & Assessment Dept (0131 242 2657)

Western General Hospital, Edinburgh (0131 537 1000)

- Phone switchboard and bleep on call Registrar for Breast Unit (08:00 – 16:00 hours Mon-Fri)
- If after 4pm, at weekends or Registrar unavailable, contact the Consultant Breast surgeon on call

St John's Hospital, Livingston (01506 523 000)

- There is a Breast Surgeon in the hospital Wednesday and Thursday all day, Friday is theatre day
- Contact him/her via switchboard on 01506 523 000, all other time please contact WGH Breast Unit team and ask for Breast surgeon on call.
- Breast Care Nurse contact via the cancer navigation hub on 0300 123 1600
- Breast Secretary - 01506 523 349 ext 53349
- Out of hours, phone Western General Hospital & ask for Consultant Breast Surgeon on call.

Microbiologists – Royal Infirmary of Edinburgh / St. John's hospital

- RIE on 0131 536 3373 during "office hours" or
- via hospital switchboard 0131 536 1000

Maternal and Infant Nutrition team:

For inpatient support email – loth.infantfeedingmw@nhs.scot
For community support, whilst under midwifery care, email loth.infantfeedingcmw@nhs.scot
For community support, whilst under health visitor care, email loth.infantfeedinghv@nhs.scot

Appendix 2: breastfeeding assessment tool

How you and your midwife/health visitor/family nurse can recognise that your baby is breastfeeding well

Baby name:	Baby CHI	Baby DOB: __/__/_____	Hosp	CMW	HV/FNP
What to look for/ask about: date:__/__/__ Further information in 'Off to a Good Start' and NHS Lothian website 'Feeding Your Baby'					
Your Baby: Is alert and has at least 8 -12 feeds in 24 hours (day 1 at least 3 - 4 feeds). Be responsive to you and your baby's needs					
Is generally calm and relaxed when feeding, and content after most feeds					
Around day 3-4 is taking deep rhythmic sucks and you will hear swallowing with a ratio of 1-2 sucks per swallow					
Will generally feed for between 5 and 40 minutes, and will come off the breast spontaneously. Offer second breast according to appetite.					
Has a normal skin colour					
Has weight loss of less than 10% (weigh if indicated by the large weight loss guideline, then around day 5 and if indicated on discharge to HV)					
Your Baby's Wet nappies :day 1-2 one or more, day 3 - 4 three or more, day 5 - 6 five or more, day 7- 28 six heavy wet nappies in 24 hours					
Dirty nappies : day 1-2 one or more dark green/black, day 3 - 4 two or more changing colour, day 5 - 6 two or more yellow size of a £2 coin in 24 hours					
Your Breasts: Breasts and nipples are comfortable					
Nipples are the same shape at the end of the feed as the start					
Hand expressing: has been shown how to hand express					
HV/FNP Only: Has had a discussion about returning to work and feeding when out and about					
Other: (tick if using) ☐ How using a dummy ☐ nipple shields ☐ infant formula, can impact on breastfeeding					
Health care worker signature: Print name:			Date: __/__/__		

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Approved: Jan 2025
Review: Jan 2028