

Mastitis: Adult & Pediatric

Reproductive Health

Clinical Decision Tools for RNs with Additional Authorized Practice [RN(AAP)s]

Effective Date: February 1, 2022

Background

Mastitis is an inflammatory condition of the breast, frequently associated with poor milk drainage during lactation and subsequent bacterial infection (Thomas & Porter, 2019). Mastitis can occur in non-lactating clients (Thomas & Porter, 2019). The majority of cases occur in the first six weeks postpartum, but mastitis can occur at any time during lactation (Thomas & Porter, 2019). The bacterial pathogen typically associated with mastitis is *Staphylococcus aureus* (Thomas & Porter, 2019). Tuberculosis mastitis can occur in populations where this disease is endemic (Thomas & Porter, 2019).

Immediate Consultation Requirements

The RN(AAP) should seek immediate consultation from a physician/NP when any of the following circumstances exist:

- client is post-menopausal;
- client appears acutely ill, with fever and malaise;
- client with signs and symptoms of sepsis (e.g., fever, tachycardia, hypotension, tachypnea, altered mental status);
- there is even the slightest suspicion of a breast abscess, this is a surgical emergency that requires immediate incision and drainage. Approximately 3% of clients with mastitis develop breast abscesses. Breast abscesses should be suspected if there is a well-defined area of breast that remains hard, red and tender despite appropriate management (Amir & The Academy of Breastfeeding Medicine Protocol Committee, 2014; Interprofessional Advisory Group [IPAG], personal communication, July 19, 2019).

Predisposing and Risk Factors

The development of mastitis may be influenced by:

- a blocked nipple pore or duct;
- a cracked nipple, especially if colonized with *Staphylococcus aureus*;
- a yeast infection (thrush);
- diabetes;
- illness in client or baby;
- improper breastfeeding technique;
- inadequate breast hygiene;
- missed, infrequent feedings or shortened duration of breastfeeding's;
- maternal stress and/or fatigue;
- engorgement;
- previous episode of mastitis;
- poor latch, weak or uncoordinated suckling leading to inefficient removal of milk;
- cleft lip or palate in infant;
- short frenulum in infant (tongue tie);
- pressure on the breast (e.g., tight bra, vehicle seatbelt);
- rapid weaning; and/or
- previous breast injuries (e.g., soft tissue injuries) (Thomas & Porter, 2019).

Health History and Physical Exam

Subjective Findings

The circumstances of the presenting complaint should be determined. These may include:

- fever for ≤ 24 hours;
- nausea and/or vomiting (in severe cases);
- chills, malaise and/or myalgia;
- an engorged breast that is swollen, painful, and shiny;
- latching difficulties due to engorgement and a stretched, flat nipple;
- maternal fatigue (Public Health Agency of Canada, 2018; Thomas & Porter, 2019).

Objective Findings

Clients with mastitis may present with:

- fatigued appearance;
- temperature of 37.8°C oral or greater;
- tachycardia;
- breast(s) that is/are tender, diffusely warm, red (red streaks may be present), and swollen;
- excoriated or cracked nipples;
- area of induration;

- blocked duct may be felt on palpation;
- fluctuance may be felt on palpation, which may indicate an abscess; and/or
- tender and enlarged axillary nodes (Public Health Agency of Canada, 2018; Thomas & Porter, 2019).

Differential Diagnosis

The following should be considered as part of the differential diagnosis:

- breast engorgement,
- nipple sensitivity,
- galactocele, or
- inflammatory breast cancer (Thomas & Porter, 2019).

Making the Diagnosis

The diagnosis is based on history and physical findings. There appears to be a continuum from engorgement to non-infective mastitis to infective mastitis and the diagnosis is usually made clinically (Thomas & Porter, 2019).

Investigations and Diagnostic Tests

Laboratory investigations and other diagnostic procedures, such as ultrasound, are not routinely needed for a clinical diagnosis (Thomas & Porter, 2019). Breast milk culture and sensitivity should be performed when:

- clients do not respond or are allergic to antibiotics,
- the condition is hospital-acquired,
- the condition recurs, and/or
- the condition is severe or unusual (Thomas & Porter, 2019).

Management and Interventions

Goals of Treatment

The primary goals of immediate treatment are to relieve symptoms, eradicate infection, prevent complications, maintain breastfeeding, and prevent reoccurrence (Thomas & Porter, 2019).

Non-Pharmacological Interventions

The RN(AAP) should recommend, as appropriate, the following non-pharmacological interventions:

- continued breastfeeding (or pumping) to avoid milk stasis;
- rest, adequate fluids, and nutrition;

- application of moist heat (shower or a hot pack) to the breast just prior to feeding (may help with the letdown reflex and milk flow);
- breast massage during feeding to help better drain the breasts;
- the use of a breast pump following feeds if infant is not nursing effectively on the affected side;
- cold packs to the breast after feeding or pumping, in order to reduce pain and edema; and
- breastfeeding support to ensure assist with latching or positioning difficulties (Public Health Agency of Canada, 2018; Thomas & Porter, 2019).

Pharmacological Interventions

The pharmacological interventions recommended for the treatment of mastitis are in accordance with the *Anti-infective Guidelines for Community-acquired Infections* (Anti-infective Review Panel, 2019) and *Pharmacological Management of Common Lactation Problems* (Lebedevs & Kendrick, 2019), *Saskatoon Health Region AntibioGrams 2019* (Saskatchewan Health Authority, 2020), the *RxFiles Drug Comparison Charts* (RxFiles Academic Detailing Program, 2021), and *Northern Saskatchewan Guidelines (2014) for Skin and Soft Tissue Infections including suspect MRSA in the Community Setting* (Population Health Unit, Northern Saskatchewan, 2014).

Analgesics, Antipyretics, and Anti-inflammatory

An anti-inflammatory agent, such as ibuprofen, may be more effective in reducing the inflammatory symptoms than a simple analgesic like acetaminophen.

	Drug	Dose	Route	Frequency	Duration
Pediatric					
	Acetaminophen	15 mg/kg/dose (maximum dose 75 mg/kg/day)	p.o.	q4-6h prn	5-7 days
AND/ OR	Ibuprofen	10 mg/kg/dose (maximum dose 40 mg/kg/day)	p.o.	q 6-8h prn	5-7 days
Adult					
	Acetaminophen	500-1000 mg (maximum dose of 4 g/day)	p.o.	q4-6h prn	5-7 days
AND/ OR	Ibuprofen	400-600 mg (maximum dose of 3200 mg/day)	p.o.	q6-8h prn	5-7 days

Oral Antibiotics

Antibiotics should be initiated if there is no improvement after 12-24 hours of conservative treatment or if the woman is acutely ill. The choice of antibiotic should be based on the severity of the client presentation. Moderate or severe mastitis requires consultation with physician/NP as the client may require hospitalization. Penicillin and amoxicillin are never good empiric choices for mastitis (poor *S. aureus* coverage).

	Drug	Dose	Route	Frequency	Duration
Pediatric (without penicillin allergy)					
	Cephalexin	50-100 mg/kg/day (maximum 2 g/day)	p.o.	divided q6h	7-10 days
OR	Cloxacillin	50 mg/kg/day (maximum 2g/day)	p.o.	divided q6h	7-10 days
Adult (without penicillin allergy)					
	Cephalexin	500 mg	p.o.	q.i.d.	7-10 days
OR	Cloxacillin	500 mg	p.o.	q.i.d.	7-10 days
Pediatric (for those allergic to penicillin or treatment of MRSA, if applicable)					
	Clindamycin	25-30 mg/kg/day (maximum 1200 mg/day)	p.o.	divided into 3 or 4 doses	7-10 days
OR	Sulfamethoxazole- Trimethoprim (SMX-TMP)	8-12 mg/kg/day (dosage is calculated using TMP component; do not exceed adult dose)	p.o.	divided q12h	10 days
Adult (for those allergic to penicillin or treatment of MRSA, if applicable)					
OR	Clindamycin	300 mg	p.o.	q.i.d.	10 days
OR	Sulfamethoxazole- Trimethoprim (SMX-TMP)	1 tablet (800/160 mg)	p.o.	b.i.d.	10 days

Client and Caregiver Education

The RN(AAP) provides client and caregiver education as follows:

- Counsel about the appropriate use of medications (dose, frequency, compliance, etc.) and their safety while breastfeeding.
- Advise that there is no evidence of risk to the healthy, term infant in continuing breastfeeding from a mother with mastitis.
- Educate on effective milk removal including the following:
 - breastfeeding more frequently, starting on the affected breast unless pain interferes with the letdown reflex, at which time, feeding may begin on the unaffected breast, switching to the affected breast as soon as letdown is achieved;
 - positioning the infant at the breast with the chin or nose pointing to the affected area may help drain the affected area;
 - massaging the breast during the feed with an edible oil or nontoxic lubricant may facilitate milk removal. Massage should be from the blocked area to the nipple;
 - expressing milk by hand or pump after the feeding, may augment milk drainage and hasten resolution of the problem;
 - alternatively, advise the client to position themselves in a recumbent position and stroke the skin surface of the affected area from the areola to the axilla. This promotes fluid drainage toward the axillary lymph nodes.
- Advise the client/caregiver who is unable to continue breastfeeding to express milk from the breast by hand or pump, as sudden cessation of breastfeeding leads to a greater risk of abscess development (Amir, & The Academy of Breastfeeding Medicine Protocol Committee, 2014; Thomas & Porter, 2019).

Monitoring and Follow-Up

The RN(AAP) should advise the client:

- if symptoms of mastitis are mild and have been present for ≤ 24 hours, conservative management (effective milk removal and supportive measures) may be sufficient.
- if the symptoms do not resolve within several days of appropriate management, including antibiotics, a wider differential diagnosis must be considered. Referral to a physician/NP is required. Investigations to confirm resistant bacteria, abscess formation, an underlying mass, or inflammatory or ductal carcinoma may be performed.
- that more than two or three recurrences in the same location requires evaluation to rule out an underlying mass or other abnormality.

Complications

Complications associated with mastitis include development of a breast abscess and sepsis (Amir, & The Academy of Breastfeeding Medicine Protocol Committee, 2014; Thomas & Porter, 2019).

Referral

Refer to a physician/NP if client presentation is consistent with those identified in the *Immediate Consultation Requirements* section or if there is no response to therapy after one week (IPAG, personal communication July 19, 2019).

References

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