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POSTPARTUM MASTITIS

I. **Applicability**

For patients presenting to triage

II. **Purpose**

To provide guidelines for the timely identification and management of patients with postpartum mastitis

III. **Epidemiology**

A. Definition: inflammatory condition of the breast, which may or may not be infectious.

a. Uncomplicated: pain, swelling, redness, with or without fever (>38°C), and NO purulent drainage or abscess

b. Complicated: purulent drainage with or without abscess

B. Pathogenesis: mastitis occurs after engorgement followed by milk stasis and/or blocked ducts leading to swelling and inflammation. Infection may occur with prolonged blockage of the ducts.

a. Most common causative organisms: Staphylococcus aureus, coagulase-negative staphylococcus (CoNS), and Streptococcus pyogenes. Less common causative organisms: Escherichia coli, Corynebacterium spp. and Bacteroides spp. MRSA is becoming more prevalent and empiric therapy with activity against MRSA should be considered in select patients as outlined below.

b. Most common during first 8 weeks postpartum.

C. Risk factors:

a. Difficulty with breastfeeding leading to incomplete emptying
b. Poor milk production
c. Prolonged period of engorgement
d. Nipple damage or trauma
e. Engorgement related to missed feeding without pumping.
f. Tight, underwire, or ill-fitting bra causing constriction of ducts.
g. Stress and or fatigue

IV. **Standard**

A. Triage Phone Assessment

1. History
   i. Previous diagnosis of mastitis
   ii. Nipple trauma or damage
   iii. Sudden onset of “flu” like symptoms (fever, chills, body aches)
   iv. Skin changes of breast (red, painful, warm wedge; “milk blister”)
   v. Engorged full breast prior to onset especially if related to skipped feeding.
2. Uncomplicated mastitis (as described in the table below) may be assessed and treated over the phone with supportive care measures if presenting in the first 12 to 24 hours of symptom onset. If symptoms persist beyond 24 hours, antibiotics may be warranted.
3. Patients with recurrent episodes of mastitis or severe symptoms with concerns for abscess should be evaluated urgently (either in clinic or in triage).

B. Evaluation

1. Early stages: subtle streaks of light pink in a single region may be the only visual abnormality. Later stages: firm, reddened, localized, hot, swollen area on a unilateral breast.
2. A fluctuant mass is often palpable when an abscess is present.
3. Pain, intense but localized
4. Fever usually >38°C, may be accompanied by tachycardia resulting from the fever. Hypotension is uncommon and may be indicative of a septic process.

V. Guideline

A. Treatment Algorithm

Clinical Setting	Recommended Therapy	Duration	Comments
Uncomplicated Mastitis			
Mild Non-Purulent Mastitis (pain, swelling, redness, no purulent drainage or abscess)	<u>Supportive care:</u> • Continue frequent breastfeeding (or pumping if applicable) to empty breast • Heat to affected area • Massage of affected region moving towards nipple while expressing breastmilk • Avoid pressure points from bras, especially underwire style. • REST • Increased oral fluids • Acetaminophen or Ibuprofen for discomfort and/ or fever	Until symptoms gone for 24 hours	
Moderate Non-Purulent Mastitis (pain, swelling redness, no purulent drainage or abscess, fever >38°C, symptoms of mild non-purulent mastitis >24 hours of supportive care)	<u>Preferred:</u> Supportive care measures as mentioned above + **Cephalexin**[*†] 500 mg PO QID <u>Preferred in Patients with Risk Factors for MRSA:</u> **Cephalexin**[*†] 500 mg PO QID + **Sulfamethoxazole-trimethoprim*** 1600-320 mg (2 double strength tablets) PO BID [see comment] <u>Risk Factors for MRSA:</u> • Mastitis worse after >48 hours of cephalexin or dicloxacillin • Prior history of MRSA infection • Recurrent mastitis • Known MRSA colonization <u>Alternative for patients with life-threatening penicillin or cephalosporin allergy:</u> **Clindamycin** 450 mg PO QID	10-14 days	• Avoid use of sulfamethoxazole-trimethoprim if the breastfeeding neonate is <1 month or has hyperbilirubinemia regardless of gestational age. Doxycycline 200 mg PO x1, then 100 mg PO BID is preferred in these cases. • Consider adjusting dose of sulfamethoxazole-trimethoprim to 800-160 mg PO BID in patients weighing <40 kg. • Use sulfamethoxazole-trimethoprim with caution in patients receiving alternative drug therapy that can cause hyperkalemia (common examples include spironolactone, angiotensin-converting enzyme inhibitors (Lisinopril), angiotensin-II receptor blockers (losartan), and direct renin inhibitors).

Complicated Mastitis			
Purulent Mastitis without Abscess (Purulent drainage without a drainable abscess)	***Outpatient clinic visit recommended** ***Cultures of drainage should be obtained if possible by expressing milk directly into a sterile unit cup** <u>Preferred:</u> Supportive care measures as mentioned above + **Sulfamethoxazole-trimethoprim*** 1600-320 mg (2 double strength tablets) PO BID [see comment] + **Cephalexin**[*†] 500 mg PO QID	10-14 days	• Avoid use of sulfamethoxazole-trimethoprim if the breastfeeding neonate is <1 month or has hyperbilirubinemia regardless of gestational age. Doxycycline 200 mg PO x1, then 100 mg PO BID is preferred in these cases. • Consider adjusting dose of sulfamethoxazole-trimethoprim to 800-160 mg PO BID in patients weighing <40 kg. • Use sulfamethoxazole-trimethoprim with caution in patients receiving alternative drug therapy that can cause hyperkalemia (common examples include spironolactone, angiotensin-converting enzyme inhibitors (Lisinopril), angiotensin-II receptor blockers (losartan), and direct renin inhibitors).
Purulent Mastitis with Abscess	***Recommend inpatient admission** ***Incision and drainage is recommended if abscess present** <u>Preferred, Empiric:</u> **Vancomycin*** IV (see nomogram, AUC goal 400-600) + Supportive care measures as mentioned above <u>Alternative if allergic to vancomycin (NOT vancomycin infusion reaction):</u> **Linezolid** 600 mg IV/PO BID	10-14 days Therapy may need to be extended based on severity of infection	• May stepdown to oral antibiotics based on cultures
*Dose adjustments necessary in patients with renal insufficiency. Guidance can be found here. †Dicloxacillin 500 mg PO QID may be used as an alternative to cephalexin, if it is contraindicated			

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VI. Procedure

A. Health Education

a. Notify OB provider or call Triage (734) 764-8134 if no improvement within 12-24 hours.
b. Teach women ways to decrease stress and obtain rest.
c. Restrict visitors.
d. Enlist help from relatives and friends with household tasks
e. Rest in bed with infant close by for frequent feedings.
f. Take Antibiotic as directed until completely gone.
g. Take acetaminophen or ibuprofen according to package instructions to control pain and fever.
h. Refer to Lactation Consultant if nipples are sore or if women are experiencing other difficulties with breastfeeding and/or complete emptying.

VII. Exhibits

A. Health Education Handout- Mastitis http://www.med.umich.edu/1libr/gyn/BirthCenterTriage/mastitis.pdf

VIII. References

[1] Briggs, G.G., Freeman, R.K. & Yaffe, S.J. (2011). Drugs in pregnancy and Lactation (9th ed.). Baltmore, MD; Williams & Wilkins.

[2] Caren, C. & Edmonson, D.A. (2013). Postpartum breast complications. In Angelini, D.J. & LaFontaine, D. (Eds.), Obstetric triage and emergency care protocols (pp.283-294). NY, NY; Springer.

[3] Wright, E.M (2013). Breastfeeding and the mother-newborn dyad. In: King, T.L., et al. (Eds.), Varney's Midwifery (5th ed., pp:115-1182).

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