Breastfeeding and Mastitis

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Incidence of mastitis

Mastitis is an inflammatory condition of the breast which may/may not be accompanied by infection

Reported incidence is up to 33% of lactating women - generally <10%

Commonest in second to third week post partum (74-95% of cases in the first 12 weeks)

Mastitis causes and management - WHO 2000

Symptoms of mastitis

- Red area on the breast - often upper, outer area
- Lumpy breast - may be hot to touch
- Whole breast may ache - may be painful to touch
- ‘Flu-like syptoms - aching, temperature raised, mother may feel tearful and tired

SYMPTOMS MAY START VERY SUDDENLY WITHOUT WARNING

Mastitis

- Mastitis is an **inflammation** of the breast
- Most cases are due to insufficient drainage of the breast
- **Antibiotics are often not necessary** and rarely as first line
- Drain breast effectively – need urgent, expert breastfeeding support
- Ibuprofen 400mg three times a day reduces inflammation

Inch S, Fisher C. Mastitis: infection or inflammation? Practitioner. 1995 Aug;239(1553):472-6.

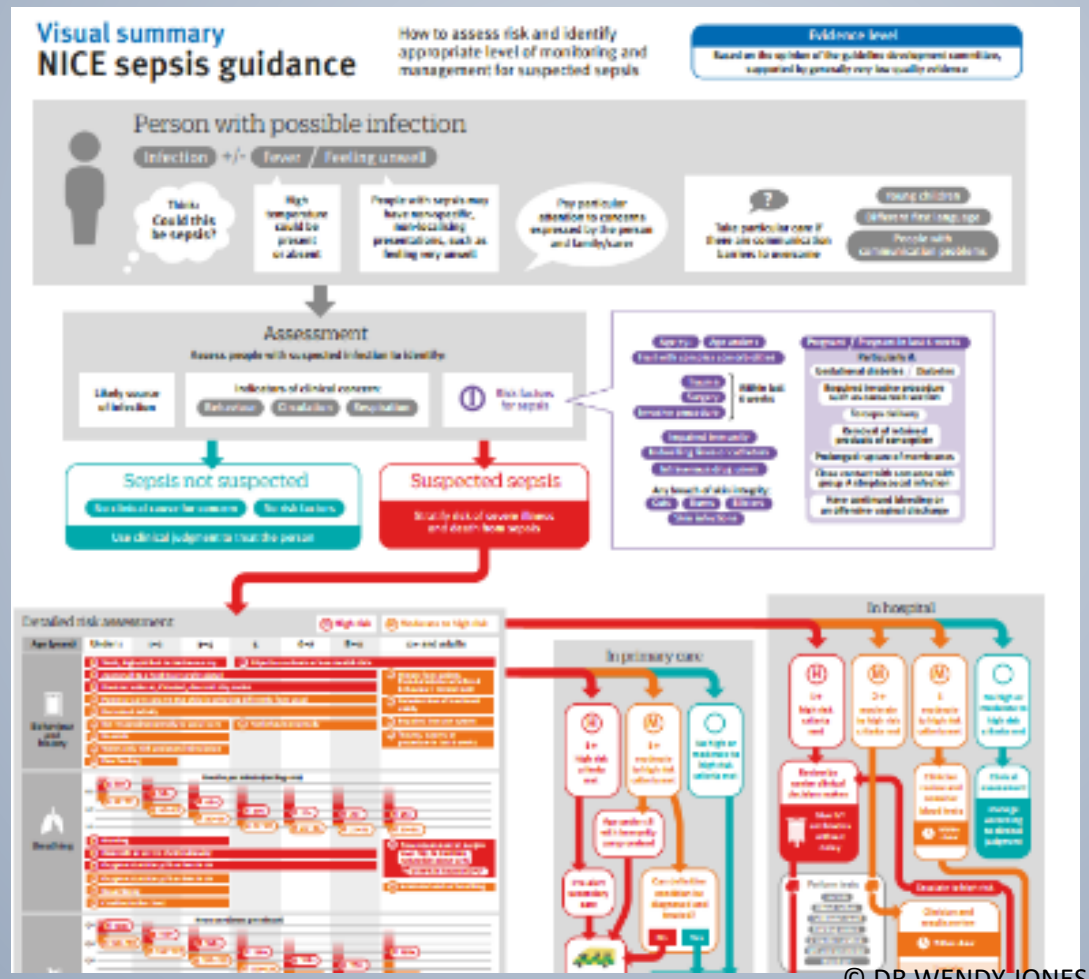
Inflammation or infection

- For most people emptying the breast as frequently as possible as fully as possible, relieves symptoms
- In the majority of cases antibiotics aren't necessary
- However, if symptoms continue despite frequent removal of milk from the breast or the mother continues to feel worse with an increasing temperature, then medical help should be sought for antibiotic therapy
- Sepsis due to mastitis can occur **www.nhs.uk/conditions/sepsis/** and a clinically very unwell mother would need urgent treatment

Sepsis and Mastitis

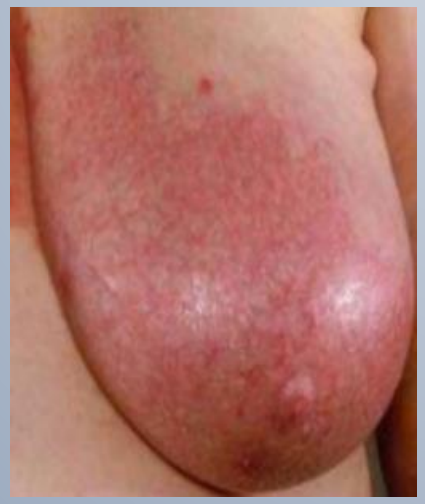
Please be aware of the risk of sepsis with mastitis and act quickly

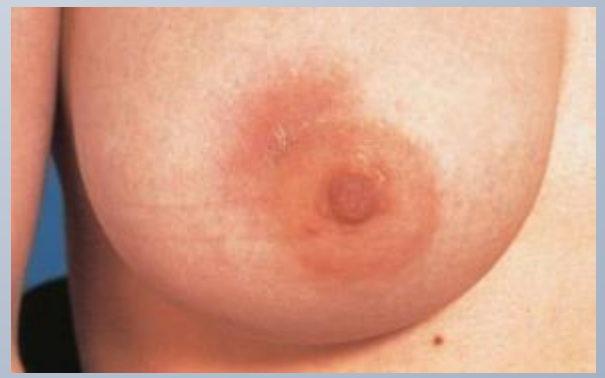
www.bmj.com/content/bmj/suppl/2016/08/11/bmj.i4030.DC1/sepsis_nice_v66_web_v6.pdf



Breast with mastitis

- Breast has red area (can vary in size), is hot and tender
- The symptoms are cause by milk leaking from the ducts into the surrounding tissue and being treated as a foreign protein by the body
- Can be more difficult to identify in women of colour





Research

- One of the most important pieces of research was carried out in 1984 by Thomsen et al
- He showed that symptoms of mastitis improved with removal of milk from the breast alone

Thomsen et al Course and treatment of milk stasis, non infectious inflammation of the breast, and infectious mastitis in nursing women Am J. Obstet.Gyn 1984: 149(5) 492-5

Course of non-infective inflammation of the mammary gland with/without treatment

Treatment	Number of cases	Duration of symptoms	Results	
		(mean days	Normal breastfeeding	Poor outcome
none	24	7.9	5	19
emptying of the breast	24	3.2	23	1

Improved Drainage

- Milk stasis improved with continued breastfeeding alone
- Non-infectious mastitis required additional expression of milk after a feed
- Infectious mastitis was treated effectively only with both removal of milk and systemic antibiotics
- Without effective removal of milk, non-infectious mastitis was likely to progress to infectious mastitis and infectious mastitis to the formation of an abscess

Thomsen et al Course and treatment of mik stasis, non-infectious inflammation of the breast and infectious mastitis. Am J. Obstet.Gynecol 1984; 149(5) 492-5

Value of antibiotics

- However, the results were improved by emptying the breasts and taking antibiotics according to Thomsen's further study
- We clearly want to avoid over use of antibiotics so unless the mother is clinically very unwell advising a delay to see if effective, frequent drainage resolves symptoms is not unreasonable
- A delayed prescription may be an option particularly with afternoon appointments or just before a weekend

Leukocyte and bacteria counts in women with clinical mastitis

Treatment	No of cases	Result		
		Duration of symptoms (mean days)	Normal bf	Poor outcome
none	55	6.7	8	47
emptying of breast	55	4.2	28	27
antibiotics & emptying of breast	55	2.1	53	2

The role of bacteria in lactational mastitis and some considerations of the use of antibiotic treatment

- 192 women with mastitis:466 controls
- Both could have bacteria in milk
- No relationship between bacterial count and symptoms
- Need to see women DAILY to determine if need antibiotics
- Conclusion “We don’t understand mastitis despite how common it is!

Kvist, L.J et al. “The role of bacteria in lactational mastitis and some considerations of the use of antibiotic treatment.” International breastfeeding journal 2008 3:6. 7

Case study

Patricia has a 3 month old baby and a toddler of 2 years. She has developed a red area on her breast. Yesterday she was feeling fluey and achey but today she is feeling better and the redness has lessened. She has been feeding frequently on that breast on the advice of the health visitor and taking ibuprofen. She is checking as someone told her she needs antibiotics if she has mastitis

She doesn't need antibiotics as symptoms are resolving but she needs to continue to "empty" the breast frequently until all symptoms have gone

It is common on social media for mothers to advise each other that antibiotics are necessary because this is the treatment they had. We do not want to over use antibiotics

Case study

I am finally going home today following a 3 night stay in hospital following admission for sepsis relating to severe mastitis.
I went from mild boob pain to being rushed to hospital in an ambulance with a temp above 40, confused, vomiting, on oxygen due to cyanosis and I had begun to peripherally shut down in less than 7 hours. It took 18 attempts to get the needed IV access and bloods. I have never felt that ill before ever.
On Saturday I had symptoms of mastitis and went to bed early as I felt sick and shivery, however I fed my 15 month old from the affected side overnight repeatedly and by morning the symptoms had resolved and I went to work as normal with no symptoms. Again Monday I was home with my children and was fine.
However on Tuesday I began with some mild breast pain again late morning and after a couple of hours began to feel unwell and shivery. Within 7 hours I was in an ambulance being rushed to hospital after attending a walk in centre.
Please note at this point except for pain there was no redness on the affected breast.

Inflammation and Depression

- Depression is associated with inflammation
- Breastfeeding has a protective effect on maternal mental health because it attenuates stress and modulates the inflammatory response
- Breastfeeding difficulties, such as nipple pain, can increase the risk of depression and must be addressed promptly
- Don’t concentrate just on what to do with respect to emptying breast etc when a mother has mastitis, talk about how it feels and reassure mum that it will resolve

Kathleen Kendall-Tackett .A new paradigm for depression in new mothers: the central role of inflammation and how breastfeeding and anti-inflammatory treatments protect maternal mental health. International Breastfeeding Journal 2007, 2:6

Leukocyte and bacteria counts in women with clinical mastitis

	Leukocytes $<10^6$/ml milk	Leukocytes $> 10^6$/ml milk
Bacteria $< 10^3$/ml milk	milk stasis	Non infectious mastitis
Bacteria $> 10^3$/ml milk		Infectious mastitis

Thomsen et al Course and treatment of milk stasis, non infectious inflammation of the breast, and infectious mastitis in nursing women Am J. Obstet.Gyn 1984: 149(5) 492-5

Leukocyte and bacteria counts in women with clinical mastitis

		Leukocytes	Leukocytes
Bacteria		<10 million/ml milk	> 19 million/ml milk
	<10,000/ml milk	milk stasis	non infective mastitis
	>10,000/ml milk		infective mastitis

Thomsen et al Course and treatment of milk stasis, non infectious inflammation of the breast, and infectious mastitis in nursing women Am J. Obstet.Gyn 1984;149(5):492-5

Thomsen et al's conclusions

- Milk stasis improved with continued breastfeeding alone
- Non-infectious mastitis required additional expression of milk after a feed
- Infectious mastitis was treated effectively only with both removal of milk and systemic antibiotics
- Without effective removal of milk, non-infectious mastitis was likely to progress to infectious mastitis and infectious mastitis to the formation of an abscess
- They related cell and bacterial counts to clinical findings and showed it was impossible to be certain from clinical signs whether infection was present or not

Prospective study Foxman

946 women followed to three months post partum

- Strongest risk factors for mastitis:
  - Previous history mastitis
  - Cracks and nipple sores in same week
  - Using an anti-fungal nipple cream
  - Pattern of frequent short feeding
  - Using a manual pump (for women with no history of mastitis)
- Characteristics of the different possible bacterial agents involved not well understood.

Foxman, B et al Lactation mastitis: occurrence and medical management among 946 breastfeeding women in the United States. American Journal of Epidemiology 2002; 155(2):103-14.

Osterman and Rahm

41 episodes of mastitis studied – bacterial cultures taken

- Group A = 25 cases (61%) – cultured normal skin bacteria
- Group B = 16 cases (34%) – cultured potentially pathogenic bacteria

Lactational mastitis; bacterial cultivation of breastmilk, symptoms, treatment and outcome. 2000 Journal of Human Lactation 16(4):297-302

Osterman and Rahm Continued

- Group A
  - 93% episode finished within a week
  - Rest and frequent breast emptying curative
  - 12% sore nipples
- Group B
  - 81% symptoms longer than a week
  - Outcomes included weaning, abscess, septic fever
  - 75% sore nipples
  - Leukocytes higher than in group A

Treatment of mastitis

- Effective milk removal - an essential part of treatment
- Supportive counselling if feeling low
- Antibiotics where appropriate
- symptomatic treatment with anti inflammatory drugs plus paracetamol

Effective milk removal

The most essential part of treatment

- Help her to improve the efficiency of milk removal by improving positioning and latch
- Position baby with chin close to the sore part
- Encourage frequent feeding
- Gently massage affected part towards nipple during the feed
- mother may also need to express her milk after feeds
- Hold the back of an electric toothbrush gently against the affected area to break up the lump is anecdotally effective

Supportive counselling

To empower mother to get through mastitis and prevent reoccurrence

- **Reassure** about value of breastmilk and that it is safe to continue - milk from affected breast will not harm baby- though it may taste salty
- **Encourage** her that it is worth the effort to overcome current difficulties
- **Counter** any conflicting information
- **Help** her find the underlying cause and understand self-treatment and prevention

Symptomatic treatment

- **Pain can be treated with analgesics**
- **Rest is valuable- in bed if possible,**

- Being in bed with child may also increase frequency of breastfeeding and therefore help milk removal

- Warm packs on the breast help relieve pain and help milk to flow.

- Ensure mother drinks sufficient fluids according to thirst

Drug treatment for mastitis

- **Ibuprofen** - 400mg three times a day after food (if no contra-indication for mother)
- **Paracetamol** - Two x 500mg four times a day (no anti-inflammatory action just relieves temperature and pain)
- **Aspirin** - should not be used in lactation as analgesic/anti-inflammatory at 2.4g/day dose
- **Antibiotics** - (most safe in lactation, loose nappies, colic etc possible but not clinically important. May cause static weight gain)

Antibiotics

- Flucloxacillin 250mg four times a day
- Amoxycillin 250-500mg three times a day

If allergic to penicillin;

Erythromycin 250-500mg four times a day

Cephalexin 250-500mg four times a day

CKS recommends treatment for 10-14 days

Mastitis, causes and management WHO 2000

https://cks.nice.org.uk/mastitis-and-breast-abscess

Dixon 2011

- With repeated episodes of abscess do not continue to prescribe the same antibiotic
- Take a milk sample to determine if the correct antibiotic is being prescribed
- Ultrasound may be valuable to determine if there is an abscess or other pathology underlying the infection

Dixon,J. and Khan,L. Treatment of breast infection. *BMJ 2011;* 342: d396.

Inappropriate treatment

- **<u>IT IS VITAL THAT BREASTFEEDING IS NOT INTERRUPTED</u>** as this prevents drainage of the breast and may worsen symptoms and cause an abscess to develop

- Use of drugs to suppress lactation (bromocriptine and cabergoline) is innapropriate, particularly during an episode of mastitis, due to side effects associated with their use

Summary of best practice

- Supportive counselling
- Effective milk removal is an essential part of treatment
- Ibuprofen for pain relief and anti-inflammatory action if not contra indicted, paracetamol as analgesic if ibuprofen contra-indicated
- Antibiotics if appropriate
  - symptoms have deteriorated or failed to improve with frequent and effective breast drainage
  - Awareness of possibility of sepsis

Key Points

- Mastitis is not always due to an an infection
- Infective mastitis requires medical treatment. Non infective mastitis can be self- treated
- The quality of attachment of the baby to the breast is important in both prevention and treatment of mastitis.
- Supportive counselling can help mothers understand the causes of mastitis and prevent re-occurrence

Additional resources

- https://cks.nice.org.uk/mastitis-and-breast-abscess#!scenario
- Academy of Breastfeeding Medicine (2014) ABM Clinical protocol #4: mastitis, revised March 2014. *Breastfeeding Medicine.* 9(5):239-243
- Jones W Breastfeeding and Medication
- Amir,L.H. (2014) Managing common breastfeeding problems in the community. *BMJ.* 348: g2954.
- Mastitis and Breastfeeding. www.breastfeedingnetwork.org.uk/wp-content/dibm/BFN%20Mastitis%20feb%2016.pdf
- For more information please email wendy@breastfeeding-and-medication.co.uk