

Clinical features and treatment of lactational mastitis: the experience from a binational study

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Summary

The characteristics of 38 patients with mastitis are listed in this study, including nationality, age, parity, history of mastitis, clinical and laboratory findings, and medical treatment. Differential diagnosis was mainly correlated to breast engorgement. Mastitis was primarily related to *staphylococcus aureus* and it was more common in primiparous patients.

Key words: Lactational mastitis; *Staphylococcus aureus*; Parity.

Introduction

Mastitis is a relatively common infectious disease during lactation, typically presenting as a localized and painful inflammation of the breast. The main etiological agents are *staphylococcus aureus*, and less frequently Group A streptococci, and/or corynebacteria [1-4]. These bacteria gain access to stagnant milk through the nipple [5]. Mastitis is often complicated by abscess formation in the affected breast if treatment is delayed [6]. Therefore, cultures of breast milk for bacteria could be useful [7, 8], assisting in differential diagnosis [8] and are generally recommended when the infection is severe, hospital-acquired, or unresponsive to appropriate antibiotics [9].

Diagnosis of mastitis is usually clinical and it typically presents as a hard, red, tender, and swollen area of one breast in a nursing mother. It is commonly accompanied by fever and malaise [9] and other systemic symptoms that may vary, and includes myalgia, chills, and flu-like symptoms [5]. Generally, mastitis in the early stages has a subtle presentation, while patients with advanced infection may present with a large area of breast swelling with overlying skin changes (eg, erythema). Reactive lymphadenopathy can also cause axillary pain and swelling [5]. In general, laboratory tests are not needed for the diagnosis of mastitis considering that septic shock rarely occurs [10] and blood cultures are of little value (unless the patient appears septic).

In a lactating woman, severe engorgement must be distinguished from mastitis which typically occurs on days two to four postpartum in women who are not nursing or at any time if breastfeeding is interrupted. On the contrary, mastitis usually occurs during the third or fourth week postpartum. This is due to the fact that breast infection is acquired from the neonate after breastfeeding and nipple cracking [11].

Materials and Methods

Two hundred questionnaires, related to mastitis diagnosis and treatment during lactation, were distributed to 20 obstetricians-

gynecologists and five midwives in five hospitals from two different countries (Greece and Romania). Fifteen questionnaires were incompletely answered and in two patients mastitis was not related to lactation. These 17 cases were excluded for further analysis. Similarly, cases with breast engorgement (bilateral with generalized involvement) were not included as "mastitis". Finally, questionnaires from 38 patients were fully answered and were thus included in the study.

Results

It was estimated that patients included in the study constituted the three percent of patients that underwent vaginal delivery or cesarian section during the time of evaluation (> 1,200 women). Mastitis was mainly related to *staphylococcus aureus* and it was more common in primiparous patients, although parity was not related to mastitis as a statistically significant factor ($p > 0.2$ with continuity correction). Nationality, age, parity of patients, and history of mastitis are shown in Table 1. Clinical and laboratory findings are shown in Tables 2 and 3, respectively. Medical treatment is shown in Table 4.

Discussion

Lactational mastitis in the present study was mainly related to *staphylococcus aureus*, and less commonly to streptococci, or other bacteria. This finding is similar to the current bibliographic and investigational data [1, 4].

Although patients included in the study constituted three percent of women delivering during the time of evaluation, percentage of mastitis was actually higher, taking into account 15 more patients (total ~4,5%) with probable mastitis not included in the study due to incompletely returned questionnaires. Taking into account that mastitis has been estimated to occur in two to 16 percent of breastfeeding women, in the patients studied, this condition was near the lower limit of values reported from other studies [9, 12, 13]. The risk of mastitis requiring hospitalization is much lower (0.09%) [14]. As expected, mastitis was more common in the primiparous patients (> 50%) [4].

Risk factors for mastitis include an episode of mastitis during a previous lactational period (four patients in this

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Table 1. — Main characteristics of patients included in the study.

	n*	%
<i>Nationality</i>		
Romanian	22	58
Greek	14	37
Albanian	02	04
<i>Age (years)</i>		
21-25	10	26
26-30	08	21
31-35	14	37
36-40	06	16
<i>Parity</i>		
First	22	58
Second	13	34
Third	03	08
<i>Previous mastitis</i>		
Yes	04	10
No	34	90

n* = number of patients.

Table 2. — Clinical findings of patients included in the study.

	n*	%
<i>Fever</i>		
Yes	26	68
No	12	32
<i>Chills</i>		
Yes	35	92
No	03	08
<i>Breast erythema</i>		
Yes	37	97
No	01	03
<i>Breast edema</i>		
Yes	36	95
No	02	05
<i>Breast sensitivity</i>		
Yes	37	97
No	01	03

n* = number of patients.

study, all belonging to the group of one previous term pregnancy with mastitis). Other main risk factors include severe prolonged unilateral engorgement, nipple excoriation or cracking, and poor milk drainage [15]. As far as the latter factor is concerned, it is obvious that breastfeeding should be encouraged in this situation, although that surprisingly a high percentage of health professionals advise patients to stop breastfeeding and do not recommend pumping. This is in contrast to all reported data from previous research and algorithms related to mastitis [4]. Furthermore, it is the only way to diminish bacterial load of the breast.

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Table 3. — Bacterial culture and leucocyte count of patients with available data.

	n*	%
<i>Bacterial culture</i>		
Staphylococcus (S.) aureus	09	24
S. epidermidis	01	03
Streptococcus	04	11
Other	12	31
Not performed	12	31
<i>Leucocyte count</i>		
09,000 - 13,000	16	42
14,000 - 17,000	07	18
18,000 - 21,000	08	21
22,000 - 25,000	01	03
Not performed	12	31

n* = number of patients.

Table 4. — Medical management.

	n*	%
Continuing breastfeeding	06	16
Pumping	07	18
Breastfeeding and pumping	16	42
Stopping breastfeeding	09	24

n* = number of patients.

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