

Severe lactational mastitis: particularities from admission

Mastite lactacional grave: particularidades da internação à alta
Mastitis de la lactancia severa: particularidades desde el ingreso hasta el alta

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ABSTRACT

Objective: to identify characteristics of women who have suffered severe lactational mastitis. **Method:** a descriptive, retrospective, documentary, quantitative study was performed. Data were collected from patient records of 114 hospitalized women from January of 2009 to December of 2013. Data were analyzed by using descriptive statistics. **Results:** a higher percentage of severe lactational mastitis was found in young, primiparous women who had completed high school, who had no partner, and did not have a job; 96.5% of women had breast complications before admission and remained hospitalized an average of 4.4 days; at discharge, 23.7% of women had weaned their infants. **Conclusion:** this study showed that severe lactational mastitis can cause great harm to the woman and the baby. **Key words:** Mastitis; Health Profile; Breast Feeding.

RESUMO

Objetivo: identificar as características de mulheres que sofreram mastite lactacional grave. **Método:** estudo descritivo, retrospectivo e documental, com abordagem quantitativa. Os dados foram coletados de registros da assistência nos prontuários de 114 mulheres internadas no período de janeiro de 2009 a dezembro de 2013. Análise mediante estatística descritiva. **Resultados:** constatou-se maior porcentagem de mastite lactacional grave em mulheres jovens, primíparas, com ensino médio completo, que não tinham companheiro e não trabalhavam fora do lar; 96,5% das mulheres tiveram alguma intercorrência mamária antes da internação e permaneceram internadas em média 4,4 dias; na alta hospitalar 23,7% das mulheres desmamaram. **Conclusão:** este estudo mostrou que a mastite lactacional grave pode causar grandes danos à mulher e ao bebê. **Descritores:** Mastite; Perfil de Saúde; Aleitamento Materno.

RESUMEN

Objetivo: identificar las características de las mujeres que sufrieron mastitis severa de la lactancia. **Método:** se realizó investigación descriptiva, retrospectiva y documental con enfoque cuantitativo. Datos eran recogidos procedentes de los registros de hospitalización de las 114 mujeres ingresadas de enero de 2009 a diciembre de 2013. El análisis mediante estadística descriptiva **Resultados:** encontrado una mayor proporción de mastitis de la lactancia severa en mujeres jóvenes, primíparas, que habían completado la escuela secundaria, que no tenían pareja, y que no trabajan fuera de casa, el 96,5% de las mujeres tenía alguna complicación de mama antes de su ingreso al hospital y permanecieron hospitalizados un promedio de 4,4 días, al momento del alta 23,7% de las mujeres renunció a la lactancia materna. **Conclusión:** este estudio mostró que la mastitis de la lactancia severa puede causar un gran daño a la mujer y el bebé. **Palabras clave:** Mastitis; Perfil de Salud; Lactancia Materna.

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INTRODUCTION

Lactational mastitis is a usually unilateral breast inflammation that can be accompanied by infection. The stasis of milk is considered a trigger of lactational mastitis, which is aggravated by the inflammatory process when the protective mechanisms against infection of puerperal women are depleted⁽¹⁾. Nipple trauma is high in women in early lactation, and constitutes a gateway to etiological agents that cause mastitis⁽²⁾.

Over 25% of puerperal women are estimated to have had at least one episode of lactational mastitis and 4 - 8% have had recurrent episodes of mastitis⁽³⁾. Studies have reported an incidence of lactational mastitis of 20.6% and 20% in the third and sixth postpartum months in New Zealand and Australia, respectively⁽⁴⁾. Another study indicated an incidence of lactational mastitis of 9.5% in the third postpartum month, in the United States⁽⁵⁾.

According to the World Health Organization, 74% to 95% of mastitis cases occur in the first 12 postpartum weeks⁽¹⁾. The etiology appears to be linked to both stasis of milk and nipple trauma, and to exacerbated maternal conditions such as fatigue, stress and anemia⁽⁶⁻⁷⁾. Other aspects include: primiparous mothers, lack of support for breastfeeding, blocked ducts and previous mastitis⁽⁸⁻⁹⁾. Other factors also seem to be involved with lactational mastitis, such as maternal age, birth complications, having a job, and large intervals between feedings⁽¹⁰⁾.

In 2012, the Brazilian federal government launched Strategy Breastfeed and Feed Brazil, which reinforce and encourage the promotion of breastfeeding and healthy eating for children in the Unified Health System who are under two years old⁽¹¹⁾.

Since early weaning is a reality in Brazil, and the mammary complications are the main causes for breastfeeding to be interrupted early, the Ministry of Health supports this new strategy, and the qualification of public health system professionals⁽¹¹⁾.

Thus, this study aimed to identify and describe the sociodemographic, obstetric and hospitalization characteristics of women with severe lactational mastitis who were hospitalized in public hospitals in Ribeirão Preto-SP.

This article describes the characteristics of women hospitalized for the treatment of severe lactational mastitis, because of the need for hospitalization in public hospitals in Ribeirão Preto, São Paulo, Brazil. We sought to understand the context in which hospitalization occurred, in order to contribute to the planning of health actions at the local level. Some of the factors that can trigger lactational mastitis were considered avoidable, circumventable or solvable through emotional support for breastfeeding mothers, specific behaviors and actions of breastfeeding promotion, and support from health care professionals⁽¹²⁾. Unveiling the profile of women with lactational mastitis does not guarantee quality care, however, it provides the professional with situational awareness to design preventive strategies to minimize the risks to which women are exposed.

This study is relevant because it identifies the profile of women who are most frequently affected by severe lactational

mastitis, thereby contributing important information for planning actions to prevent this injury.

It is expected that by knowing the particularities of this population, health care professionals will have more ability to act to reduce risks that result in mastitis followed by abcess, leading to early weaning and culminating in losses for the mother and the child.

METHOD

This was a descriptive, retrospective and documentary study. Secondary data were used from the women's care records during hospitalization.

The study was conducted in Ribeirão Preto, in the northeast of São Paulo state, with an estimated population of 605,000 inhabitants, of which approximately 52% are women. Ribeirão Preto has a public, private and philanthropic network of health care services, covering the primary, secondary and tertiary levels. The municipal health care network is divided into five health districts, each with its defined coverage area and a district health unit in which medical specialties and emergency care services are offered, in addition to several basic health units, according to the dimensioning of the territory and population.

The Breastfeeding Program of the Ribeirão Preto Municipal Health Secretariat is responsible for the notification of hospital admissions due to lactational mastitis in three hospitals that are a municipal reference, through a project called "A Life Blooms". The "A Life Blooms" project team performs daily visits to all hospitalized puerperal women in the three reference hospitals. The cases of lactational mastitis are recorded in specific charts with information relating to the women's identification, birthing information, clinical assessment of the breasts, evaluation, and hospital conduct, given the situation.

Data of all women who were hospitalized in the three reference institutions for treatment of lactational mastitis within the study period were obtained from the coordination of the Municipal Breastfeeding of the Health Secretariat of Ribeirão Preto.

Data were electronically compiled in a spreadsheet by using Microsoft Office Excel 2007, with double data entry, and were analyzed by using descriptive statistics of frequencies and measures of central tendency, with the aid of Prism 5.0 software.

The research was conducted within the ethical standards. The standards and regulatory guidelines for research involving human beings, established in Resolution 196/96 of the National Health Council, were met in accordance with the time of the study performance.

RESULTS

During the study period, 114 women were hospitalized in reference hospitals of the National Health System, in the city of Ribeirão Preto, São Paulo.

In 2009, there were 22 (19.3%) hospitalizations; 14 in 2010 (12.3%); 25 (21.9%) in 2011; 29 (25.4%) in 2012; and 24 (21.1%) in 2013.

The time between birthing and the occurrence of mastitis averaged 35 days, with the exception of three women for whom the condition occurred late, from one year to one year and nine months after giving birth. These mothers did not have comorbidities accompanying lactational mastitis.

The mean age of women's was 23.9 (dp=6.1), the group with age of 20 to 29 years corresponding to the higher frequency of hospitalizations (62, 54.4%). As for education, 51 (44.7%) completed secondary school and two (1.7%) completed higher education. Information on marital status showed that most had no partner (64, 56.1%). Of the total 114 women, 64 (56.1%) did not have a job. Table 1 shows the sociodemographic characteristics.

Table 1 - Distribution of women hospitalized for treatment of severe lactational mastitis, according to age, education, marital status and labor activity. Unified Health System hospitals in Ribeirão Preto, São Paulo, Brazil, 2014 (N = 114)

Variables	n	%
Education		
Complete secondary school	51	44.7
Incomplete secondary school	27	23.7
Incomplete primary school	19	16.7
Complete primary school	10	8.8
Complete higher education	2	1.7
Illiterate	1	0.9
No record	4	3.5
Marital status		
No spouse	64	56.1
Has a spouse	46	40.4
No record	4	3.5
Labor activity		
Has no job	64	56.1
Has a job	38	33.3
Student	8	7.0
No record	4	3.5

Regarding the obstetric characteristics, 73 (64.0%) women were primiparous, 12 (10.5%) had suffered an abortion, and 67 (58.8%) had their first pregnancy. As for the current pregnancy, all had undergone prenatal care in the public municipal health network, and 77 (67.5%) had a normal birth. Seventy-six (66.7%) women received instruction on breastfeeding during prenatal care. The secondary data did not allow us to know the content and strategies provided in these instructions. Table 2 shows that obstetrical characteristics of women who were hospitalized for lactational mastitis.

At the time of hospitalization for the treatment of lactational mastitis, 67 women (58.8%) were providing exclusive breastfeeding, 27 (23.7%) mixed or partial breastfeeding, 3 (2.6%) were supplementing breastfeeding, and 15 (13.1%) had weaned their babies.

Table 2 - Distribution of hospitalized women for treatment of severe lactational mastitis, according to the number of pregnancies, parity and type of birthing in the last pregnancy. Unified Health System hospitals in Ribeirão Preto, São Paulo, Brazil, 2014 (N = 114)

Variable	n	%
Previous pregnancies		
One pregnancy	67	58.8
Two pregnancies	26	22.8
Multiple pregnancies	21	18.4
Parity		
Primiparous	73	64.0
Secundiparous	26	22.8
Multiparous	15	13.1
Previous abortions		
None	97	85.0
One	12	10.5
Two	05	4.4
Type of birth in the last pregnancy		
Normal	77	67.5
Cesarean section	33	28.9
Forceps	4	3.5

With the exception of four women, all others (110, 96.5%) had some type of breast complications prior to hospitalization for the treatment of lactational mastitis. Among the breastfeeding-related problems, 21 (18.4%) women had breast ingurgitation, and 60 (52.6%) had nipple trauma. It should be noted that two women had already had breast abscess due to the recent birth, one with surgical drainage and one with spontaneous drainage. Table 3 shows the breastfeeding-related problems prior to the current hospitalization.

The data regarding the length of women's stay in the institution showed a mean of 4.4 days, with a minimum hospitalization of one day and maximum hospitalization of 13 days. All women who were breastfeeding kept their babies in their rooms.

Of the 114 women who were hospitalized for the treatment of lactational mastitis, 62 (54.4%) had a breast abscess on admission. Of these, 57 (91.9%) were surgically drained, 4 (6.5%) had spontaneous drainage, and there was one case (1.6%) of chronic abscess.

Among the 62 breastfeeding mothers, before the resolution of the abscess, 25 temporarily stopped breastfeeding. After abscess resolution, among 25 breastfeeding mothers, 9 (36%) resumed exclusive breastfeeding before hospital discharge, 9 (36%) shifted to mixed breastfeeding, and there was no record about baby feeding type for seven of the women (28%).

Of the 62 breast abscesses, secretion samples were collected for culture in 52 (83.9%) cases; there was no secretion collection in ten of the women (16.1%). Of the 52 cases with a collected culture, 27 (51.9%) were positive for *Staphylococcus aureus*; 1 (1.9%) tested positive for *Streptococcus*

Table 3 - Distribution of women hospitalized for the treatment of severe lactational mastitis for breastfeeding-related problems before the current hospitalization. Unified Health System hospitals in Ribeirão Preto, São Paulo, Brazil, 2014 (N = 114)

Breastfeeding-related problem	F	%	Specifications
Mammary ingurgitation	21	18.4	Type of nipple trauma
Nipple traumas	60	52.6	20 nipple fissures 6 nipple tears 9 pain 9 hyperemia 1 vesicle 15 non-specified nipple trauma
Mastitis (no hospitalization)	7	6.1	Type of drainage
Drainage of anterior mammary abscess	2	1.7	1 surgical 1 spontaneous
Others	20	17.5	Other issues: 13 hyperthermia 7 breastfeeding difficulties

agalactiae; in one (1.9%) of the cultures there was no growth of microorganisms, and in 23 (44.2%) cases the results were not recorded in the medical record.

Manual milking as a clinical treatment was performed for 96 (84.2%) women. Data sources used in the study did not mention if the technique was performed by the women, by the nursing staff, or by the woman with the assistance of a professional.

At the time of hospital discharge, regarding the treatment of mastitis, of the 114 women, 56 (49.1%) were breastfeeding using both breasts, 12 (10.5%) were mixed or supplemented breastfeeding, 27 (23.7%) women stopped breastfeeding, and 19 (16.7%) records did not have that information.

DISCUSSION

The findings of this study allowed us to understand the characteristics of women who were hospitalized for serious lactational mastitis in Ribeirão Preto, Brazil. These characteristics also warn of a possible group of women that are vulnerable to mastitis.

Lactational mastitis can lead to early weaning⁽¹³⁾. One of the factors that can cause early weaning is the demographic profile of the breastfeeding mothers, namely a, low educational level, maternal age, and income, as well as those without a partner⁽¹⁴⁾.

Maternal age is not directly linked to lactational mastitis⁽¹⁵⁾, however, there is evidence that young women find it more difficult to breastfeed due to insecurity and inexperience⁽¹⁶⁾. This can lead to difficulty breastfeeding, culminating in breast problems and consequently in early weaning.

As for women's educational levels, there is no consensus in the literature regarding the risk for developing lactational mastitis. One study indicated that women with low educational

levels were more vulnerable to the development of mastitis⁽¹⁷⁾; another study stated that women with higher educational levels are exposed to the same risk⁽¹⁵⁾, which coincides with our findings.

Studies show a protective association regarding mastitis, when the breastfeeding mother does not have a job⁽¹⁷⁾. This was not observed in this study, as 56.1% of women did not have a job.

Family support is considered beneficial in reducing the breastfeeding-related stress, which is a risk factor for developing lactational mastitis⁽¹⁷⁾. This fact draws attention to the need for assistance and emotional support for breastfeeding women, including the division of household chores, so that the mother has more free time for breastfeeding⁽⁸⁾. Another study showed that family and the partner exert great influence on the establishment of breastfeeding⁽¹²⁾. In addition, the involvement of health care professionals in instruction about the importance of breastfeeding is also very important⁽¹³⁾.

The data do not make it possible to state whether the lack of partner influenced the difficulties that women in this study had with the breastfeeding process, but they do enable the statement that 56.1% of women had no partner, and had difficulty breastfeeding.

When referring to obstetric characteristics, the contribution of other authors who claim that primiparous women are more likely to develop lactational mastitis is unanimous^(1,8). In our study, there was a higher percentage of primiparous women (64.0%). Women who never breastfed may be more anxious and, as a result, this may interfere with the breastfeeding process⁽⁸⁾.

We did not find any studies that show an association between birth type and lactational mastitis. However, indirectly, we know that cesarean delivery discourages breastfeeding, possibly due

to invasive procedures and the delay in starting breastfeeding. A Chinese study showed the influence of cesarean delivery on breastfeeding rates, suggesting that women undergoing cesarean section have lower exclusive breastfeeding rates at discharge⁽¹⁸⁾. Exclusive breastfeeding prevents mammary ingurgitation, which is a precursor to the development of mastitis⁽¹⁾.

In addition to the benefits indicated previously to maintain exclusive breastfeeding, another important aspect is that this practice reduces costs for both the family and for the state.

For the family, with the baby's arrival, it is good to think about saving costs on the purchase of infant formula or other milk. A study shows that a family spends an average of 35% of the minimum wage to purchase infant formula⁽¹⁹⁾. For the government, there is a decrease in the costs of hospitalization of children who are more susceptible to diseases in the absence of breastfeeding, and a decrease in the hospitalization of mothers, who are susceptible to various illnesses^(12,19), including mastitis.

In our study, women were hospitalized an average of 4.4 days for treatment, but some remained more than a week, which also causes financial losses to the government and a great emotional cost to women and the baby. Possibly being out of the family environment is not comfortable for both, which cannot favor breastfeeding, leading to more damage, because effective breastfeeding prevents ingurgitation and assists in the breast recovery.

The losses are even greater when a woman develops a breast abscess⁽¹⁾. In these cases they are subjected to surgical drainage, which leads to weaning due to the discomfort of breastfeeding after surgery, in addition to the concern regarding the aesthetic results that this procedure brings⁽²⁰⁾. Adequate clinical and emotional support for women is crucial to maintaining breastfeeding; when she is not welcomed and properly instructed, the mother can refuse to breastfeed, both in this and in any following pregnancies⁽¹⁾.

In this study, 54.4% of women had a breast abscess and only 21% were able to maintain exclusive breastfeeding in the treatment period. This reaffirms the quote above regarding the high risk of weaning in these situations.

The literature shows that the incidence of breast abscess varies between 3% and 11%⁽⁴⁻⁵⁾. Our study revealed a much larger percentage than that usually described in the literature. The most common bacterium found in the breast abscess secretion culture was *Staphylococcus aureus*^(1,4), which coincides with our findings, since 51.9% tested positive for this microorganism.

These cases of infected mastitis are considered the most severe. In order to minimize damage, the woman should be as comfortable as possible. Antibiotics and symptomatic medications help her to feel better and provide more comfort in the effective removal of milk, which is essential in the recovery of the affected breast. When it is impossible to maintain breastfeeding, pumping must be performed until breastfeeding can begin again⁽¹⁾.

Given the above, we can provide preventive actions and progress on goals related to breastfeeding, in partnership with managers and other health care professionals, assumed by different levels of the health service organization.

The performance of this study in one region of São Paulo can be considered a limitation, because it does not allow for generalizations. However, it should be noted that unveiling these findings can awaken interest in new studies in other settings, which can contribute to the advancement in the prevention of severe lactational mastitis in potentially vulnerable women.

CONCLUSIONS

The results presented in this study showed that severe lactational mastitis can cause great harm to the woman and the baby. Health professionals should be aware of the signs of mastitis especially in young, primiparous women, who do not have higher education, have no partner, and are in the first postpartum month.

Breastfeeding mothers show signs that there are breastfeeding-related problems before complications requiring hospitalization, such as nipple trauma, mammary ingurgitation, hyperthermia, difficulty breastfeeding. These are certainly not good signs, but if resolved, this can readily prevent worsening of the case.

When there is the need for hospitalization, it is important that the breastfeeding mother and baby stay together in a comfortable environment and it must allow the woman to receive support from her family and partner. The health care team is also a very important part in facilitating the breastfeeding process and short hospital stay.

Lactational mastitis is a consequence of inadequate or late management of breast complications. Our expectation is that the health care professionals who assist women in breastfeeding may act in the promotion, protection and support to exclusive and complementary breastfeeding.

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