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## Independent Study Module for Lactation Consultants

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## Independent Study Module for Lactation Consultants

“History, Physical and Laboratory Findings, and Clinical Outcomes of Lactating Women Treated With Antibiotics for Chronic Breast and/or Nipple Pain,” by Anne Eglash, MD; Mary Beth Plane, PhD, MSSW; and Marlon Mundt, MS

Approved for 1 L-CERP and contact hours

Cost: US\$10 for members and US\$20 for nonmembers

After reading the above article, please answer the study questions below and record your responses on the answer sheet located at the end of the questions. The module expires 3 years from the publication date of this issue of the *Journal of Human Lactation*. Answer sheets must be received by that date to receive continuing education credit. Send the completed answer sheet, payment, and evaluation form to ILCA Continuing Education, Suite 102, 1500 Sunday Drive, Raleigh, NC 27607, USA. Notification of approved hours will be sent by return mail. Answers to the study questions may be found on page 479 of this issue.

### Learner Objectives

After completing this study module, the learner will be able to:

- Recognize signs of a bacterial lactiferous duct infection
- Indicate appropriate antibiotic treatment for chronic breast or nipple pain

### Independent Study Questions

1. Numerous studies have been done in recent years to determine the etiology and proper treatment of lactating women presenting with chronic breast and/or nipple pain. What was the methodology used for the study conducted by Eglash, Plane, and Mundt?

- a. Agar cultures were used to determine what, if any, pathogen was the cause of the breast and/or nipple pain.
  - b. The chocolate cultures used contained antibiotics in order to eliminate any undesired pathogens.
  - c. A computer search was done to reveal previous diagnoses of breast and/or nipple pain.
  - d. The nipples and areola were cultured only when the pain had persisted for at least 1 week.
2. The article cited several studies on chronic breast pain. One study found which of the following associations?
    - a. Nipple cracks and positive cultures for candidiasis
    - b. Breast pain for longer than 3 weeks as a reliable predictor of *Candida albicans*
    - c. Use of antifungal nipple cream and mastitis in the same 3-week interval
    - d. 42% of the studied women with sharp shooting breast pain had positive cultures for *C. albicans*
  3. One of the components of breastmilk inhibits the growth of a certain pathogen. What is the component and the pathogen it inhibits?
    - a. Lactose–*Staphylococcus aureus*
    - b. Lactoferrin–*Candida albicans*
    - c. Human milk inhibitor– $\beta$ -hemolytic streptococcus
    - d. Human milk inhibitor–*C. albicans*
  4. Among the multiparous women included in the study, what percentage had experienced similar nipple and/or breast pain with previous children?
    - a. 90%
    - b. 10%
    - c. 40%
    - d. 75%
  5. What pathogen is 3 times more likely to be the source of deep breast pain?
    - a. *Staphylococcus aureus*
    - b. *Candida albicans*
    - c.  $\beta$ -hemolytic streptococcus
    - d. Haemophilus bacteria

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6. More than 75% of the studied women presented with which of the following signs and symptoms?
  - a. Yellow scabs on 1 or both nipples
  - b. Sharp, shooting breast pain
  - c. Tender, bilateral, and deep aching breast pain
  - d. Nipple cracks occurring after the first postpartum week
7. What type of testing showed the association between the clinical signs and symptoms and the prescribed therapy and/or the culture results?
  - a. Non-crossbreaks tabular analysis
  - b. Parametric test of statistical significance
  - c. Raw data conversion tables
  - d.  $\chi^2$  analysis
8. Of the women from the reviewed studies, 69% had received some type of antifungal treatment from their physicians. Of these women, 43% reported which of the following?
  - a. Improvement of nipple damage
  - b. Partial relief from their breast pain
  - c. A less painful latch
  - d. Healing of their baby's thrush
9. Specific physical signs and symptoms found in the women with chronic breast and/or nipple pain revealed that what percentage of women had nipple trauma with nursing?
  - a. 80%
  - b. 73%
  - c. 50%
  - d. 13%
10. Most of previously studied women had presented with which of the following symptoms?
  - a. Yellow nipple scabs and signs of acute inflammation
  - b. Itching of the nipple and areolar skin
  - c. Breast erythema and warmth
  - d. Nipple cracks and blisters
11. Antibiotics were prescribed for all the women in the studied data. Of these women, 70% reported which of the following?
  - a. Breast and/or nipple pain resolution
  - b. Receiving antifungal therapy in addition to antibiotics
  - c. Choosing to wean due to the pain syndrome
  - d. Using topical steroids in addition to the antibiotics
12. Of the 54 studied women who continued to breastfeed, how many failed to experience pain resolution?
  - a. 5 women
  - b. 1 woman
  - c. 6%
  - d. 9 women
13. What was the average length of time for pain resolution after antibiotic treatment commenced?
  - a. 5.7 weeks
  - b. 3 weeks
  - c. 6 weeks
  - d. 7.5 weeks
14. Initiation of antibiotic treatment for these patients was based on which of the following rationale?
  - a. The presence of open nipple lesions and the time of breast pain commencement which corresponded to the typical time of acute mastitis onset.
  - b. 75% of the multiparous patients had a history of mastitis, with previous breastfeeding experiences increasing their risk of developing mastitis.
  - c. Among the women with open nipple sores, the milk cultures were 40% positive for bacterial pathogens.
  - d. It is suspected that a nipple sore always represents a bacterial lactiferous duct infection.
15. Nearly half of these women reported which of the following?
  - a. Latch and suck difficulties
  - b. Bilateral breast pain
  - c. A history of nipple cracks and sores
  - d. Onset of pain at 2 weeks postpartum
16. The majority of literature on candidiasis of the breast does not typically report certain findings. The author of this article suspects the following:
  - a. Sharp, shooting breast pain is a good indicator of an intraductal fungal infection.
  - b. Bacterial duct infection should be suspected if a woman presents with nipple infection.
  - c. Breast palpation revealing tenderness should alert one to a bacterial lactiferous duct infection.
  - d. Phone conversations should be adequate for patients to report the resolution of their symptoms.

17. The following recommendations are concluded by the authors:
  - a. Deep breast pain is symptomatically complex and beyond the scope of practice of the lactation consultant.
  - b. Women with candidiasis are at a higher risk for developing a bacterial duct infection.
  - c. Women presenting with the complex symptoms of deep breast pain, nipple lesions, and/or acute mastitis should have their milk cultured.
  - d. The first line of defense for chronic breast pain should be oral antifungal therapy.
18. Further research is needed to understand the complex symptoms of breast pain. The authors' suggestions include:
  - a. The role antifungal properties of common nipple ointments play in masking the etiology of breast pain
  - b. Research to understand the ideal culture to use when culturing breastmilk
  - c. Studies to determine why some women with chronic breast pain do not seek help from breastfeeding specialists
  - d. Understanding the best bacteriologic and biochemical markers for breastmilk pathogens

**Independent Study Module Answer Sheet**

“History, Physical and Laboratory Findings, and Clinical Outcomes of Lactating Women Treated With Antibiotics for Chronic Breast and/or Nipple Pain,” by Anne Eglash, MD; Mary Beth Plane, PhD, MSSW; and Marlon Mundt, MS

Approved for 1 L-CERP and contact hours

Completed form must be received no later than 3 years from publication on the first of the month to be eligible for continuing education credit. Send answer sheet with payment and evaluation form to: ILCA Continuing Education, Suite 102, 1500 Sunday Drive, Raleigh, North Carolina 27607 USA.

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Record your answers to the questions below by circling the letter that corresponds to your answer.

- |            |             |
|------------|-------------|
| 1. a b c d | 10. a b c d |
| 2. a b c d | 11. a b c d |
| 3. a b c d | 12. a b c d |
| 4. a b c d | 13. a b c d |
| 5. a b c d | 14. a b c d |
| 6. a b c d | 15. a b c d |
| 7. a b c d | 16. a b c d |
| 8. a b c d | 17. a b c d |
| 9. a b c d | 18. a b c d |

**Independent Study Module Evaluation**  
**International Lactation Consultant Association**

Module: "History, Physical and Laboratory Findings, and Clinical Outcomes of Lactating Women Treated With Antibiotics for Chronic Breast and/or Nipple Pain," by Anne Eglash, MD; Mary Beth Plane, PhD, MSSW; and Marlon Mundt, MS

Thank you for completing this ILCA independent study module. Please respond to the following questions by circling the degree to which you agree or disagree with the statement.

**Disagree → Agree**

- |           |  |
|-----------|--|
| 1 2 3 4 5 | The module's content was clear and relevant.   |
| 1 2 3 4 5 | I was satisfied with the level of information.   |
| 1 2 3 4 5 | Test questions were appropriate to the material presented.   |
| 1 2 3 4 5 | The material was new to me.  |
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| 1 2 3 4 5 | This is the first ILCA study module I have completed.  |
| 1 2 3 4 5 | I plan to complete future ILCA study modules.  |
| 1 2 3 4 5 | I am certified by the International Board of Lactation Consultant Examiners.   |
| 1 2 3 4 5 | I plan to use the CERPs for initial certification.   |
| 1 2 3 4 5 | I plan to use the CERPs for recertification.   |
| 1 2 3 4 5 | I am currently employed in a lactation setting.  |
| 1 2 3 4 5 | I can use this information in my work setting.   |
| 1 2 3 4 5 | I have attended an ILCA conference in the past 2 years.  |
| 1 2 3 4 5 | I am an ILCA member.   |
| <hr/>     |  |
| 1 2 3 4 5 | How many years have you worked with breastfeeding families?<br>(1) 1-5 (2) 6-10 (3) 11-15 (4) 16-20 (5) over 20  |
| 1 2 3 4 5 | Which best describes the highest educational level you have achieved?<br>(1) Secondary school (2) 2 years postsecondary<br>(3) Baccalaureate (4) Master's (5) Doctorate or medical |
| 1 2 3 4 5 | Approximately how many hours did you spend reading and studying the module and answering the questions?<br>(1) 1 hour (2) 2 hours (3) 3 hours (4) 4 hours (5) 5 hours              |

Please enclose this form with your answer sheet and send it to ILCA Continuing Education, 1500 Sunday Drive, Suite 102, Raleigh, NC 27607, USA.