Challenges of breastfeeding preterm infants: A case study. What goes right, what goes wrong, and what can nurses do?

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This is a pre-print of an article accepted for publication in *AWHONN Lifeline* (10,6 2006). The definitive version is available at www3.interscience.wiley.com.
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Case Study on Breastfeeding Challenges for the Preterm Infant

Abstract

This case report highlights the challenges for mother-preterm infant dyads who choose to breastfeed. For breastfeeding to succeed, and for the preterm infant to reap all the benefits breastfeeding provides, health care providers on all levels must increase communication between practices and institutions, enhance continuity of care, and diagnose and manage problems quickly and correctly. This article demonstrates many areas where anticipatory guidance for the mother and infant could have resulted in a better outcome.

Key words: Breast Feeding; Infant, Premature; Neonatal Intensive Care Unit; Health Professional Support; Continuity of Care
Callouts

1. “I wished that they (RN) would have asked me what my goal was. I had to be the one to even bring up nursing (breastfeeding)—it wasn’t something they would ask.”§

2. Communication between practitioners and with the dyad can make all the difference for breastfeeding success. ¥

3. As nurses continue to learn about the critical transitions for preterm infants, they will be better able to assess, manage, and develop interventions specific to each dyad’s needs.£
Introduction

Promoting breastfeeding offers clinical challenges for Maternal Child Nurses and requires understanding the experience of the mother. Maternal Child Nursing can expand to meet the preterm infant’s and the mother’s unique needs, in collaboration with the lactation specialists at the institution and in the community. Opportunities for education of other health professionals regarding caring for both mother and infant abound. In caring for patients in this environment, the following case study provides nursing staff many points to consider and improve upon.

Case Presentation of MH & BH*

MH is a 32 year old Caucasian woman (GTPAL 11101) with a master’s degree in education who has no significant contributing medical problems. Summarizing her prenatal risk factors: Age >30, Infertility x 18 months, overweight BMI 26-28, abnormal AFP screening 1/124 risk Downs Syndrome, peripheral edema at 30-32 weeks, resolved by bed rest, no increase in blood pressure. MH’s infant, BH, experienced Intrauterine Growth Restriction (IUGR) at 30-32 weeks and was approximated to weigh 3 lbs 8 oz. At 34.5 weeks BH experienced a decrease in amniotic fluid and continued IUGR.

Labor and Birth

MH’s birth experience at a large metropolitan hospital was highly stressful, she described the nurses’ attitude as “non-supportive: “She (the RN) seemed to know I was going to have a cesarean section, and didn’t support me as I tried to have a normal birth.” A cesarean-section was performed as a result of failed induction and fetal distress and BH was placed in infant special

* Initials were changed to protect patient confidentiality.
BH was born preterm at 34 ½ weeks gestational age, weighing 3 lbs. 4.5 oz and 16 inches in length.

Experiences with Health Care Providers

MH wanted to breastfeed her daughter, and she described a non-supportive environment in the neonatal intensive care unit (NICU). “I wished that they (RN’s) would have asked me what my goal was. I had to be the one to even bring up nursing (breastfeeding)—it wasn’t something they would ask.” § MH initiated visits with the hospital lactation consultant as they were not offered to her. BH was discharged from the NICU eight days after birth, having thrived under the NICU nursing care.

In the NICU, BH was bottle fed, MH described BH: “She never learned to be patient and wait for the (milk) letdown or just to continue sucking...it (the bottle) was so much easier than the breast.” No concrete physical support for breastfeeding and no anticipatory guidance were provided prior to BH’s discharge from the hospital.

MH stated: “Our lives were going to be a lot different once we left the NICU—they (the RN’s) had to have known I was going to have problems with breastfeeding.” In addition, inconsistent feeding methods, such as mixing human and artificial milk, and alternating gavage and bottle feeding, added to the mother’s perception of lack of support for breastfeeding. MH perceived that the nurses’ attitude was that there was no difference between breast milk and formula. She states: “they knew she (BH) needed a certain amount of nutrition and they made sure she got that” whether it was formula or breast milk.

Although her family, friends, and her husband offered her emotional and psychological support, MH continued to face obstacles and still remained predominately on her own in pursuing her breastfeeding goal. She experienced nipple pain (7-8 on a scale of 0 no pain -10 worse pain
she’s ever experienced) and low milk supply. Under the care of an independent International
Board Certified Lactation Consultant (IBCLC) nurse practitioner (NP), MH maintained a tight
breastfeeding and pumping schedule and kept strict records for the first three months. Typically,
she nursed every three hours for an hour (½ hour on each breast), supplemented with 2 oz of
formula and breast milk, pumped her breasts for an additional 1 ½ oz, and then provided nipple
care for her sore breasts. By the end of this regimen, it was time to feed again.

The IBCLC NP prescribed mupirocin and nystatin ointments for nipple infection and
triamcinolon for irritation to manage the nipple pain. MH was treated for low milk supply with
oxytocin nasal spray and continued to keep careful records of her breastfeeding. A referral was
made for ultrasound therapy to treat plugged ducts which cleared. No follow up phone call was
made by the IBCLC regarding the effect of the medications or the ultrasound therapy. Finally, it
was suggested that MH go on an elimination diet taking out all dairy to increase her low milk
supply. These attempts were unsuccessful, and additional health care provider interventions during
this period were inadequate.

The hospital lactation consultant followed up once by phone, briefly asking “how things
were going” and then inquiring if she was going to rent the pump for another month. When MH
asked about treating sore nipples, she recommended ice and said to call her if they were not better
in one week. The hospital lactation consultant never followed up with MH.

At her OB/GYN follow up appointment one week after her cesarean-section, she saw a
nurse practitioner for clogged ducts. Her OB/GYN never spoke with her regarding breastfeeding,
except to say to her during a prenatal visit that the hospital where she was delivering would be
supportive of her breastfeeding goals. No follow-up phone call regarding the clogged ducts was
ever made. Additionally, at BH’s pediatric office visits, MH found discrepancies between doctors
regarding breastfeeding knowledge and attitudes. The pediatric practice never followed up with her on her progress with breastfeeding.

When BH was two months old, MH became sick with the flu and her general practitioner prescribed oseltamivir phosphate and said “don’t nurse.” MH stopped nursing and slept for two days. Oseltamivir phosphate is an anti-viral for influenza A and B and is classified by Hale (2004) as a Lactation Risk Category (LRC) of L3, which is considered to be “moderately safe”.¹ When she felt better and decided that she still wanted to breastfeed, a friend referred her to a practice run by Dr. T.*, a Medical Breastfeeding Specialist. MH went to the practice and saw a nurse practitioner RZ* who advised her to take two days off from breastfeeding to allow her nipples to heal. MH explains she was asked “‘How much can you pump? What are you able to do?’, and when I said ‘twice a day’, the nurse practitioner RZ said, ‘great, pump twice a day’”. RZ developed a plan of care around MH’s schedule and needs.

In addition, the nurse practitioner prescribed motilium ² for MH to help increase her milk supply. RZ advised her to formula feed and then go to the breast, feeding less formula each nursing session. Following this care, MH’s milk supply increased, her nipple pain resolved, and her nursing schedule became better integrated into her daily life. MH and BH did not receive adequate breastfeeding assistance until BH was 4 months old, after that time, she breastfed successfully to her original personal goal of 6 months.

Concluding Remarks

¹ (Hale, 2004) An LRC of L3 means that although no controlled studies in breastfeeding women exist, there is a possible risk or controlled studies demonstrate only minimal non-threatening adverse effects. This drug should be given only if the potential benefit outweighs the potential risk to the infant (p.18).

* Initials were changed to protect practitioner confidentiality

² (Hale, 2004) This product is unavailable in the USA but can be found in compounding pharmacies. Hale documents it as having a Lactation Risk Category (LRC) of L1 = Safest, meaning “it has been taken by a large number of breastfeeding mothers without any observed increase in adverse effects in the infant…it is considered the ideal galactagogue” (p.18, 259-60)
MH navigated the health care system with one goal in mind: to “go at least 6 months exclusively breastfeeding.” The experience of having a preterm infant was highly emotional for MH and her family. In retrospect, MH explained she “had to come to terms with the fact that she did not breastfeed exclusively.” She says, “I used to feel guilty, I felt like I couldn’t sustain her forty weeks in me and then out of me I couldn’t feed her, so I failed. But I have gotten over that because she is a happy baby, she smiles at me and coos at me. I never had depression, but I cried every day twice for 2 months.”

Case Discussion

Importance of breastfeeding in preterm infants

Current research clearly demonstrates the multitude of benefits that breastfeeding offers the preterm infant, including gastrointestinal, nutritional, immunological, developmental, and psychological benefits (Callen & Pinelli, 2005). The American Association of Pediatricians recognize the significant benefits of host protection and improved developmental outcomes compared to formula-fed preterm infants ("Policy statement. Breastfeeding and the use of human milk.," 2005). Stimulation of the immune system occurs with human milk, offering protection from infectious diseases, cancers, and metabolic disorders (Heining, 2001). Further, breastfeeding is associated with lower incidence of childhood disorders and diseases, including sudden infant death syndrome, allergies, diabetes type I and II, and childhood obesity (Crenshaw, 2005).

Breastfeeding the preterm infant is of the utmost importance due to their particular vulnerability to infections and their underdeveloped physiology. Human milk helps protect them from necrotizing enterocolitis (Strodtbeck, 2003) and other infections, digests easily, and provides the ideal nourishment as they rapidly develop and grow. However, the mother-preterm infant dyad faces immense obstacles in establishing successful breastfeeding within the hospital environment.
Challenges Breastfeeding Preterm

and at home after discharge (Callen, Pinelli, Atkinson, & Saigal, 2005). In the case of MH, she encountered multiple social, institutional, and personal barriers to breastfeeding success.

Just as airway, breathing, and circulation (ABC) are nursing priorities for the preterm infant, breastfeeding as a process must move to the center of this vulnerable patient’s care. Perhaps the addition of “D” for Dyad care should be added to these priorities. In our bottle feeding culture, many perceive “breastfeeding” to be the food product, human milk. However, clinicians must look at breastfeeding as the complex and dynamic relationship between a mother and her infant. The Maternal Child Nurses clinical priorities must expand to include nurturing the mother infant dyad for management of a successful breastfeeding relationship. Dyad promotion should have equal priority to managing the mother and infant’s medical diagnoses.

Identifying critical transitions:

Preterm infants and their mothers have great difficulty with breastfeeding during critical transition stages. The transition for a mother from pregnancy to postpartum and the development of a good milk supply can be impeded by the stress of a preterm birth and lack of healthy infant breast stimulation. The infant must transition from in-utero circulation to extrauterine life and independent breathing, reflexes for milk transfer and survival must be developed, and eventually gavage feeding must transition to, ideally, exclusive breastfeeding. Crucial to these interdependent transitions is the comprehensive care of this dyad by health care professionals prenatally, in the hospital, and post-discharge of mother then of infant.

The literature on preterm infant breastfeeding has focused on the physiological benefits, tools for assessment of breastfeeding, barriers, milk supply, and the use of technologically based interventions (Callen & Pinelli, 2005; Callen et al., 2005). Further research is needed on the influence of comprehensive care on the difficult transition a preterm infant makes from bottle,
gavage, cup or syringe feedings to feeding at the breast. As seen in this case study, the dynamics of health care provider-patient interactions shapes the course of the breastfeeding experience much more than the use of a breast pump or nipple shield. In fact, when MH recounted her story, she focused on her struggle to get support from health care providers and to reconcile different approaches to care of the breastfeeding problems she and her infant encountered.

Various tools for assessing breastfeeding have been created and utilized. Two of these tools, LATCH and IBFAT, have been used to study preterm infants. Using the acronym “LATCH”, breastfeeding success in the NICU was measured by: latch, audible swallowing, type of nipple the mother has after stimulation, comfort, and hold (Elliott & Reimer, 1998). A study using the IBFAT tool developed by Mathews (to measure mature infant readiness to feed, rooting, fixing/latch, and sucking patterns) examined breastfeeding patterns of low birth weight infants after hospital discharge (Hill, Ledbetter, & Kavanaugh, 1997). This tool did not adequately assess the premature and low birth weight infant feeding patterns due to the specific needs of this population that are very different from term and mature infants. In addition, these tools made mothers anxious (Elliott & Reimer, 1998; Hill et al., 1997).

MH’s experience supports the need for more effective tools for assessment and greater specialized knowledge on the part of the nursing staff at the hospital.

Recommendations for clinical care

Barriers and Anticipatory guidance

Barriers to breastfeeding for preterm infants and their mothers have been well-cited in the literature, one review describing the number one barrier to breastfeeding in 3 out of 6 studies was inadequate milk supply (IMS) (Callen et al., 2005). The Hill-Aldag lactation model quantifies barriers in relationship to milk output (Hill, Aldag, Chatterton, & Zinaman, 2005). Hill’s research
Challenges Breastfeeding Preterm

over the past decade has differentiated between real and perceived IMS, and studied its presence in black and white women, and in low-income populations. The outcome of this research is the Hill-Aldag lactation model which can be used for appropriate anticipatory guidance during the entire course of care (Hill et al., 2005). Primary mediators that worked to MH’s benefit included: education, ethnicity, income, lived with father of infant, intention to breastfeed and timing of that decision. However, physiological stress and psychological distress and the combined effect of secondary mediators such as: lack of initiation and frequency of breast stimulation, lack of kangaroo care, and mismanaged supplementation, all contributed adversely to her milk output.

While the focus of the Hill-Aldag lactation model is the mother, a model of “The autocrine control of milk-production by the healthy baby” focuses on the infant’s responsibility for milk production (Smillie, Campbell, & Iwinski, 2005). Clinicians, when offering lactation support, must take into account the infant’s primary role in stimulating lactation and determining milk supply. A preterm infant that is not providing adequate nipple stimulation during the critical early period of breastfeeding initiation, places the mother at risk for impaired lactation and/or early cessation of breastfeeding (Smillie et al., 2005). Studies have shown the importance of “ideal target milk volumes” for mother’s of preterm infants that should be 750-1000 ml/day (Meier, Engstrom, Mingolelli, Miracle, & Kiesling, 2004). Those working with the mother of the preterm infant should emphasize the importance of early breast stimulation, including milk removal by pump or hand expression. The stress experienced by parents of preterm infants may have an effect on their willingness to pump or express milk for their infant whose outcome is questionable, and maternal nurses empathetic support can make all the difference for breastfeeding success.

Discharge Planning
The most difficult critical transition is the infant’s discharge to home. Discharge planning should be initiated at the time of admission to the NICU. Ideally, the parents are able to stay 1 or 2 nights prior to the infant’s discharge from the NICU to home, so that any challenges with breastfeeding can be recognized (Wight, 2004). Nursing responsibility to the mother-preterm infant dyad starts with special encouragement during labor and birth and in the NICU. In the immediate postpartum period, the Maternal Child Nurses should discuss breastfeeding options with the mother, including the need for early breast stimulation, and develop a plan of care. Finally, home care, collaboration and follow up are essential to the successful continuation of breastfeeding the preterm infant. The United States discharges preterm infants much earlier than other parts of the world where discharge of heavier and developmentally more advanced infants who are further established in their breastfeeding occurs (Wight, 2004).

Health professionals’ support of breastfeeding has an effect on the dyad’s success. Examining patient’s perspective of nurses’ breastfeeding support, a study found that the attitudes, knowledge, commitments and perseverance of perinatal nurses were what truly mattered to patients (Gill, 2001). Hospitals tend to model the bottle-feeding culture of the United States, and women perceive this often non-verbal behavior as a lack of support for breastfeeding by health care professionals.

Maternal Child Nurses are in a unique position to empower the infants’ parents with referrals, knowledge about the techniques for adequate breast stimulation and milk transfer, and assessment of preterm infant feeding cues, satiety and growth. In addition, parents must be actively encouraged to ask questions about breastfeeding, supplementation, and infant care related to their breastfeeding relationship. Responsibility of breastfeeding falls on the shoulders of all health care providers, but Maternal Child Nurses are able to coordinate and oversee discharge
planning which takes into account the lack of coordinated community resources for lactation support.

Lack of Continuity of care: Collaboration between health care providers

Once the infant is discharged, communication between health care providers is limited.

MH’s breastfeeding experience demonstrated inconsistent care with poor follow up on the part of most health care providers, including nurses. Many obstacles prevented individual nurses and health care providers from providing effective care to MH and her infant. There was no protocol in place in the NICU for encouraging breastfeeding long term and the hospital interventions may have made later breastfeeding more difficult. In MH’s experience and from her perspective, the hospital did not follow up adequately, nor support breastfeeding after discharge. Neither the OB/GYN practice nor the pediatric practice appeared to have protocols to support and follow up on breastfeeding. This exposure to myriad practitioners without adequate backgrounds in lactation management impairs comprehensive care and adversely affects breastfeeding outcomes. Health care professionals receive little or no education on lactation management, and although their intention to support the breastfeeding mother is usually well placed, their behavior does not always demonstrate this (Bernaix, 2000). Primary care practitioners, obstetricians, and pediatricians lack time, confidence and expertise in caring for these breastfeeding patients (Taveras et al., 2004).

Maternal Child Nurses can provide anticipatory guidance in these areas. More research is needed on the importance of health care team collaborations and breastfeeding outcomes for these vulnerable infants. The unique needs of breastfeeding mothers of preterm infants have been well described (Callen & Pinelli, 2005; Callen et al., 2005). Clinicians need an increased understanding of milk transfer for a preterm infant, to adequately develop interventions for this vulnerable
population (Hurst, 2005). Communication between practitioners and with the dyad can make all
the difference for breastfeeding success.

Summary and Conclusions:

BH gained weight in the hospital and was discharged after only eight days in the NICU,
which is a testimony to excellent nursing care. However, nursing staff did not initiate support nor
adequately encourage the breastfeeding mother-infant dyad. The mother received limited
education and anticipatory guidance; her hospital experience reflected a non-supportive,
breastfeeding unfriendly environment. Similarly, post discharge MH did not receive the necessary
currency from her health care providers to breastfeed successfully. MH did finally find a
practice specializing in breastfeeding problems, and once under the care of the physician and nurse
practitioner at this practice, many of her breastfeeding problems resolved and her experience
improved immensely. However, this practice is unique nationally, and other changes must be
made within hospital and community settings to better meet the needs of this vulnerable patient
population.

Tools can be developed to assess and study preterm infant breastfeeding patterns. More
research needs to be done on these patterns in order to equip nurses and health care providers with
the information they need when caring for preterm infants. Additionally, nursing staff can work
together to learn about caring for mothers who are breastfeeding preterm infants. The key to their
breastfeeding success is more effective nursing staff support, expertise on preterm infant feeding
patterns, thorough teaching, and follow up on the part of nursing and community health care
providers. Institutions can continue to experiment with protocols and programs to help establish
and successfully maintain breastfeeding in the preterm infant.
As nurses continue to learn about the critical transitions for preterm infants, they will be better able to assess, manage, and develop interventions specific to each dyad’s needs.

Community health care professionals in all areas would benefit from increasing their knowledge and expertise in lactation management, and recognition of when to refer. Further research on collaborative care post-discharge is necessary, with specific suggestions for protocols, follow-up, and communication methods. Finally, Maternal Child Nurses can be encouraged and supported by administration to become CLC/IBCLCs and/or have IBCLCs on staff on the Maternal Child units including the NICU and nursery.

In conclusion, continued dialogue needs to occur to prioritize breastfeeding, or protection of the “dyad”, as a major priority for preterm infants and mothers. On the maternity units, the ABC’s of patient care could include a “D” for Dyad-promotion. Making positive changes to support and encourage this life-saving relationship between mother and infant should be a goal for every health care professional.
References


