Late Preterm Birth & Breastfeeding

The purpose of this fact sheet is to explore the relationship between late preterm infants and breastfeeding. The fact sheet will discuss the difficulties and complications of breastfeeding late preterm infants from both the infant’s and the mother’s perspectives. Finally, the fact sheet will consider areas for future research and potential intervention strategies, considering both family- and hospital-based strategies.

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Background & Problem Definition

Preterm infants are babies born before 37 weeks gestation. Late preterm (LP) infants, a subset of this population, are babies born between 34 and 36 weeks gestation. Often, physicians and providers consider these infants to be healthier than younger preterm babies because LP infants more closely resemble full term infants.

Researchers have demonstrated protective benefits of breastfeeding for infants – physiological and mental – as well as the long-term positive impact of early bonding between mother and child, especially for preterm infants who may need to be hospitalized following birth.

Preterm infants have not developed the brain function or nervous system maturity required for feeding, and so have difficulty latching onto nipples for breastfeeding and coordinating the suckling action. Further, new moms may struggle to produce enough breast milk to provide for their preterm babies since much of their milk storage is created in the last few weeks of pregnancy.

Because of developmental barriers experienced by both babies and new mothers, breastfeeding preterm infants can be very difficult. Late preterm infants are especially vulnerable to health problems because they appear healthy and so get less medical attention, but are still quite underdeveloped.

Author’s Note

This fact sheet contains information primarily from three review articles: “Preterm birth: Strategies for establishing adequate milk production and successful lactation” (Geddes, D. et al), “The Relationship of Brain Development and Breastfeeding in Late-Preterm Infants” (Hallowell, S.G. et al), and “The Paradox of Breastfeeding-Associated Morbidity among Late Preterm Infants” (Radtke, J.V. et al). When these three articles were in agreement, there is no citation and the reader should assume that the information is represented in all of them. Otherwise, please refer to the citation and reference list found at the end of this fact sheet for further research.

"The specific needs [of late preterm infants] at birth are related to physiologic and developmental immaturity and are largely dependent on their ability to successfully feed to avoid short-term outcomes resulting in hospital readmission."
Late Preterm Infants & Morbidity

- LP infants have only 65% of their full brain volume, demonstrating the importance of those last few weeks of gestation on brain development.
- LP infants have a higher mortality rate (arguably somewhere between 3 times\(^2\) and 4.6 times higher\(^3\)) than full-term infants.
- The leading causes of death for LP infants are congenital malformations, low birth weight, and Sudden Infant Death Syndrome\(^1\).
- LP infants are four times more likely than full-term infants to have jaundice, respiratory distress, poor feeding habits, temperature instability, or hypoglycemia\(^2\).
- 54% of LP infants have jaundice, 37% have suspected sepsis, and 32% exhibit feeding difficulties\(^2\).

Hospital Treatment

While in the hospital, preterm babies often have extended stays or receive extra care through the NICU that can prevent initiation of breastfeeding.\(^3\) LP infants are likely to get discharged earlier than other preterm babies because they can appear as healthy as full-term babies. Often times, though, these younger infants need medical attention despite seeming developmentally on-track. Breastfed LP babies are 1.8 times more likely than breastfed full-term infants to need hospital care. Further, LP infants are susceptible to infection and health problems caused by inadequate nutritional intake likely due to difficulty with breastfeeding; indeed, 80% of hospital readmissions for LP infants are due to jaundice.

Prevalence of LP Infants in the United States

Premature infants in the United States account for 12.8% of all births.\(^4\) Late preterm births account for 72% of all preterm births.\(^4\) In 2005, this translated into 375,000 late preterm births.\(^2\) They are the fastest growing cohort amongst all preterm births,\(^2\) yet there is not a lot of research and clinical focus on this age.

FACT: One-third of brain occurs develops during the last six to eight weeks of gestation, leaving preterm infants with underdeveloped brains.

“They may resemble full term babies, but late preterm infants are physiologically, metabolically, and neurologically immature with limited compensatory mechanisms for adjusting to extrauterine life.”\(^4\)
Risk Factors for Baby

- Preterm morbidities like chronic lung disease and intracranial hemorrhage can make it difficult for babies to breastfeed.
- Undeveloped neurological function and developmental delays from early delivery can be very problematic:
  - Limited coordination for the suck-swallow-breathe function required for breastfeeding
  - Diminished ability to suck on nipple
  - If tube feeding is introduced in order to help preterm infants feed, the baby may develop poorer sucking habits later.
  - Lack of required stamina or strength to initiate and continue breastfeeding
- Early discharge from the hospital for LP infants who appear healthy but are neurologically or physically immature have an increased risk of being readmitted to the hospital due to feeding difficulties and associated morbidities, like jaundice
  - LP infants who are not admitted to the NICU are more likely than all other babies to be readmitted to the hospital within two weeks of discharge.

Risk Factors for Mom

- The components of breast milk differ when the milk is expressed before 37 weeks gestation, which may have an effect on mom or baby.
  - Because preterm births are often delivered via caesarean section and NICU trips that separate mom from baby, skin-to-skin contact is often delayed or does not occur at all, which inhibits the triggering of the milk production reflex and delays lactogenesis.
    - Infection, multiple births, or complications during labor may also prevent skin-to-skin contact.
    - Type I diabetes, obesity, caesarean section, and hypertension may also delay lactogenesis.
- Because the infants have weakened sucking abilities, the breasts do not produce as much milk.
- Lack of breastfeeding support, work or school obligations, or disease may also inhibit a mother’s ability to breastfeed.
Intervention Strategies

Baby-Focused Interventions:

- Oral and non-oral stimulation
- Supplement with donor-expressed milk or formula
- Monitor baby’s feeding to ensure that baby is actually consuming breast milk, although this can be very difficult to measure

Mom-Focused Interventions:

- Use of nipple shields
- Advocate for and initiate skin-to-skin contact, which can help moms lactate up to four times longer than moms who did not experience skin-to-skin contact after birth
- Hand expression of breast milk, especially early after delivery to ensure collection of colostrum
- Early and frequent breastfeeding, with the possible addition of double pumping to collect as much milk as possible

Hospital-Focused Interventions:

- Neonatal staff should encourage breastfeeding initiation and continuation after discharge
- Breastfeeding education during pregnancy
- Lactation Consultants (LCs) available for new parents
- Nurse or LC follow-up within 48 hours after discharge to check-in on mom and baby
- Broad multi-disciplinary approach focusing on overall hospital care like the Association of Women’s Health, Obstetric, and Neonatal Nurses (AHWONN) Late Preterm Infant Initiative or CPQCC-organized interventions
- Follow the 2008 Academy of Breastfeeding Medicine directives and focus on providers to coordinate and promote breastfeeding

Opportunities for Future Research

There are many areas for research to improve the health and care of LP infants and the ability to breastfeed. In general, more research needs to focus specifically on LP infants rather than grouping them together with all preterm infants. Directed research like this can provide more information on feeding behaviors and oral intake. Researchers can develop more accurate clinical measurements and assessments for the volume of breast milk that infants are actually ingesting. Weighing before and after feedings can be helpful in providing a rough estimate of the amount of milk consumed, but a more specific measurement tool would be helpful for understanding the differences between preterm and full-term infants. Researchers could also study different approaches to increasing breast milk production, especially for mothers of preterm infants who might experience difficulty with adequate milk supply. A recent study found that relaxing sounds and imagery led to a 63% increase in milk yield, so more studies like this could lead to improved techniques for moms of preterm babies. On a broader scale, health researchers and practitioners would benefit from improved understanding of how LPT infants fit into the larger system of hospitals, timing of discharge, quality of bonding, and provider attitudes.

“Physiological, psychological, process, and system factors affecting breastfeeding outcomes within the late preterm population warrant further investigation.”
References


Image References

6. http://community.babycenter.com/post/a48308293/please_stop_telling_women_that_birth_before_38-40_weeks_will_result_in_nicu_stay