

Supporting Breastfeeding in the Neonatal Intensive Care Unit

Rush Mother's Milk Club as a Case Study of Evidence-Based Care

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KEYWORDS

• Human milk • Breastfeeding • Breast pump • Lactation

KEY POINTS

- The evidence for the use of human milk (HM) in the neonatal intensive care unit (NICU) is compelling, but the translation of this evidence into best practices, toolkits, policies and procedures, talking points, and parent information packets is limited.
- HM feedings are not yet prioritized in a manner comparable with that of other NICU therapies, and NICU staff members and families have inconsistent information and a lack of lactation technologies to optimize the dose and exposure period of HM feedings.
- Stimulating a culture of using the evidence about HM in the NICU can change this circumstance, and requires use of evidence-based quality indicators to benchmark the use of HM, consistent messaging by the entire NICU team about the importance of HM for infants in the NICU, establishing procedures that protect maternal milk supply, and incorporating lactation technologies that take the guesswork out of HM feedings and facilitate milk transfer during breastfeeding.

INTRODUCTION

Human milk (HM) feedings from the infant's own mother reduce the risk of numerous short-term and long-term morbidities, their associated sequelae, and costs of care for premature and other at-risk infants.¹ For premature infants, higher doses of HM are associated with a lower risk of enteral feeding intolerance, late-onset sepsis,

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necrotizing enterocolitis, chronic lung disease, retinopathy of prematurity, neurocognitive delay, and rehospitalization at 18 and 30 months of age.²⁻¹⁰ Further, the postnatal timing of high doses of HM may be important, because several studies suggest that high doses of HM during the first 14 to 28 days of life are associated with lower risk of various adverse outcomes in the neonatal intensive care unit (NICU).^{2-4,7} A separate line of research also suggests that the presence of bovine products (not merely the absence of HM feedings) negatively affects intestinal permeability and gut colonization,¹¹⁻¹⁵ making the relationship between HM feedings and morbidities even more complex. However, the rapidly accumulating evidence suggests that the bioactive components of HM provide morbidity-specific protection via different mechanisms during different exposure periods in the NICU hospitalization.

Although these outcomes of HM feedings are well documented for infants in the NICU, families and health care providers struggle to translate this evidence into actionable policies, procedures, guidelines, and resource allocation to improve the use of HM in the NICU. This article summarizes the processes for creating a culture of evidence for increasing the dose and exposure period of HM feedings in the NICU, including the implementation of evidence-based quality indicators for measuring and benchmarking HM use. Best NICU practices for encouraging mothers to initiate and maintain lactation, protecting the maternal milk supply, caring for pumped HM, transferring from gavage to at-breast feeding, and using lactation technologies to solve common NICU problems with HM feedings are summarized.

A CULTURE OF USING THE EVIDENCE ABOUT HM IN THE NICU

The Rush Mothers' Milk Club is an evidence-based lactation program in the 57-bed NICU at Rush University in Chicago, in which 98% of mothers provide milk for their infants in the NICU, and the average daily dose of HM received during the NICU hospitalization by very low birth weight (VLBW; <1500 g birth weight) infants exceeds 60 mL/kg/d. This program translates the evidence about HM into understandable concepts and teaching materials for health care providers and families, and allocates resources, such as industrial freezers to store HM and the use of breastfeeding peer counselors (BPCs), to optimize the dose and exposure period of HM feedings for all infants in the NICU. Most fundamentally, the Rush program has established a culture of using the evidence, which has in turn led to high rates of HM feeding.

Of the various therapies used routinely in the NICU, HM use has among the most empiric support for safety, efficacy, availability and cost-effectiveness.¹ When conceptualized within a culture of using the evidence, HM feedings are a therapeutic priority for compromised infants, implemented in a manner like other evidence-based practices that improve outcomes in the NICU. Specifically, this process entails engaged practitioners who knowledgeably discuss the evidence for use of HM in the NICU, policies and guidelines that translate the evidence into routine clinical practices, and quality improvement efforts that provide feedback about the achievement of evidence-based benchmarks. In the context of a culture of using the evidence, infrastructure or resource needs are addressed for HM feedings (eg, storage freezers and waterless milk warmers) and considered in the same manner as other evidence-based interventions known to improve neonatal health outcomes.

In contrast, we do not advocate conceptualizing the NICU as having a culture of breastfeeding, which may lead to use of non-evidenced strategies based on emotional or sociopolitical rationale and avoidance of lactation technologies (eg, creamatocrits, test weights, nipple shields, and special bottle units for feeding

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