

Predictive Factors for Early Breastmilk Discontinuation in Premature Infants: A Retrospective Study

Smiti Gupta MS3, Dr. Darah Yuhas, Dr. Janet Wasylyshen-Velasco, Dr. Adrienne Stolfi
Pediatric Hospital Medicine, Dayton Children's Hospital



INTRODUCTION

The AAP recommends exclusive breastfeeding for 6 months, followed by continuation of breastfeeding with introduction of complimentary foods for at least 1 year (1). There has been considerable success initiating breastfeeding in birth hospitals. This can largely be attributed to many beneficial programs, including the WHO/UNICEF Baby-Friendly Hospital Initiative and "10 Steps to Successful Breastfeeding" (2, 3). Despite the success with increasing breastfeeding rates in birth hospitals, only 58.3% of US infants received breast milk at 6 months of age and only 25.6% of US infants were exclusively breastfed at 6 months in 2019 (4). This discrepancy is even greater for the vulnerable population of premature infants who may experience unique barriers to breastfeeding (5, 6). Given this disparity, the focus of our research was to evaluate the duration of breastfeeding after premature infants were discharged from the hospital, and identify the possible risk factors associated with early breastfeeding discontinuation. If specific risk factors for early breastfeeding discontinuation are able to be established, then targeted interventions to help these mother-infant dyads could be implemented in order to prolong exposure to human milk and decrease short and long term risks for early cessation.

MATERIALS/METHODS

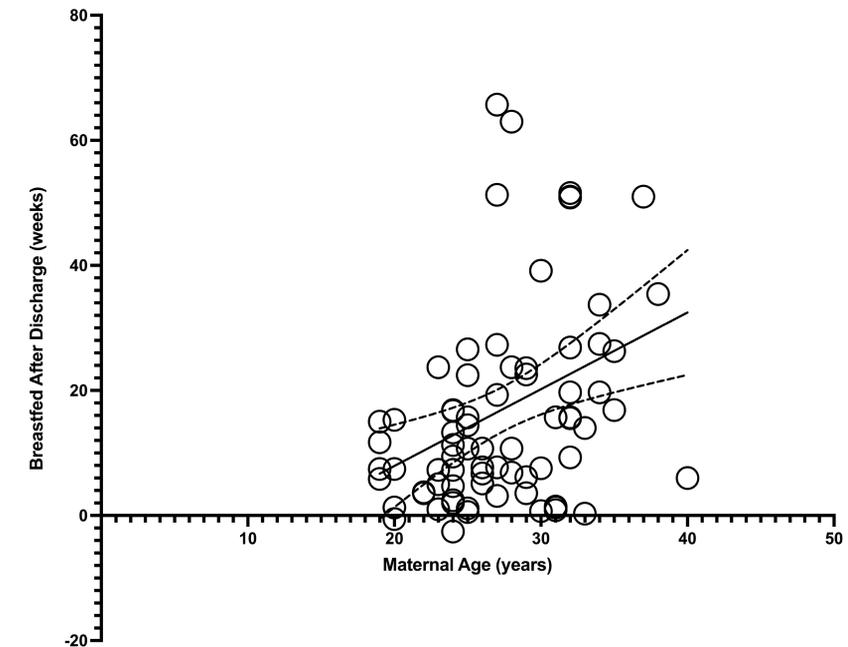
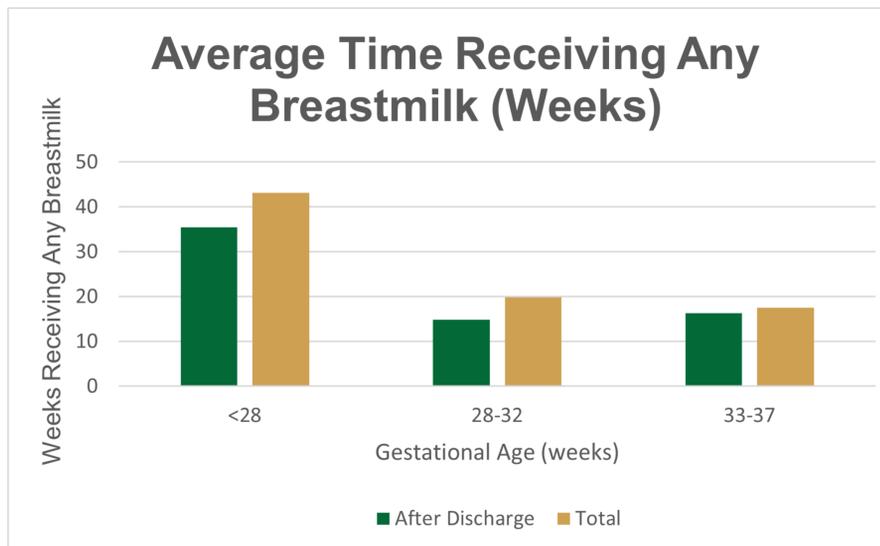
This was a retrospective cohort of infants seen at one large, urban academic pediatric primary care practice between 2017 and 2019. Only infants born at <37 weeks gestation were included. A total of 187 records were included in analysis. Patient charts were reviewed for feeding method at time of discharge from birth hospital and number weeks after discharge that breastfeeding was discontinued. Data was also gathered on maternal age, race, method of delivery, insurance type and multiparity status. Out of the 187 patient records, 82 infants were receiving breast milk at time of discharge from their birth hospital. These infants were organized into extremely preterm (<28 weeks gestation), very preterm (28-32 weeks gestation), and moderate to late preterm (33-37 weeks gestation) groups. The primary outcome was the duration of breastfeeding after birth hospital discharge. For analyses of variables associated with weeks breastfed after discharge, simple linear regression was used for continuous variables (maternal age), and one way ANOVA or two-sample t tests for categorical variables. Multiple linear regression was then used to determine associations for statistically significant variables after controlling for other significant variables in univariate analyses.

LEARNING OBJECTIVES

1. Identify risk factors for early breastfeeding discontinuation in premature infants in the outpatient setting
2. Recognize moderate to late premature infants as a particularly vulnerable group for early breastfeeding discontinuation
3. Justify the need for additional resources and support for premature infant-mother dyads in the outpatient setting

RESULTS

Out of the 187 premature infants, 82 were receiving breast milk at time of hospital discharge (43.8%). Of the 82 infants, 61% were male, 88% were born from single gestation, 51.2% were delivered by Cesarean section, and 90.2% had Medicaid insurance. The average maternal age was 27.5 years. Five infants (6.1%) were born at <28 weeks, 12 (24.6%) at 28-32 weeks and 65 (80.2%) at 33-37 weeks gestation. The average age at time of discharge for <28 weeks, 28-32 weeks and 33-37 weeks groups were 8.2 weeks, 5.0 weeks and 1.2 weeks, respectively. The average number of weeks infants received breastmilk after discharge for <28 weeks, 28-32 weeks and 33-37 weeks groups were 35.5 weeks, 14.9 weeks and 16.3 weeks, respectively. In univariate analyses, the variables associated with weeks breastfed after discharge were gestational age groupings and maternal age. Infants <28 weeks were more likely to receive breastmilk for longer than infants born between 28-32 weeks and 33-37 weeks (p value 0.035). Simple linear regression for maternal age showed that each one year increase in maternal age was associated with a 1.22 week increase in breastfeeding after discharge (p value 0.002). Other factors such as infant sex, race, insurance type, delivery method or multiparity status were not statistically significant predictive factors for duration of breastfeeding after hospital discharge. Gestational age groupings and maternal age were entered into the multiple regression analysis which showed that gestational age and maternal age were independent predictive factors for weeks breastfed after discharge. 19.7% in the variability of weeks breastfed after discharge could be explained by the infants gestational age and maternal age taken together.



CONCLUSION

The purpose of this study was to identify risk factors for breastfeeding discontinuation in premature infants that had already established breastfeeding at time of discharge from their birth hospital. We found that very premature infants (< 28 weeks) received breast milk for a significantly longer time than the moderate to late premature infants (33-37 weeks) after discharge. We suspect this finding is related to the very premature infant's history of strong inpatient breastfeeding support while they were admitted to the hospital, which was 7 weeks longer than the moderate to late premature infants on average. The success of inpatient interventions such as lactation consultation, postnatal education, and kangaroo care (which these infants likely received) have also been well described in the literature (7). More importantly, this data suggests that there continues to be a discrepancy in breastfeeding support in the inpatient versus the outpatient setting. Early breastmilk discontinuation is not unique to the premature population but primary care providers need to be aware that this high-risk cohort may require an increase in targeted breastfeeding support, particularly with moderate to late premature infants and young mothers. Additional prospective studies are needed to assess the benefit of specific out patient interventions so high risk mother-infant dyads are able to reach the Global Health Target for 2025 (8) or even the more modest Healthy People 2030 objective (9).

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