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Lauren Ridgway
University of Nebraska Medical Center

Melissa K. Thoene
University of Nebraska Medical Center

Ann Anderson-Berry
University of Nebraska Medical Center

Child Health Research Institute

University of Nebraska Medical Center

Children's Hospital & Medical Center

CHRI Pediatric Research Forum 2021 Abstract

Feasibility and Application of Early Enteral Feeding Initiation in Extremely Low Birth Weight Infants

Lauren Ridgway[1], Melissa Thoene[2], Ann Anderson-Berry[2]
[1]Department of Pediatrics, College of Medicine, University of Nebraska Medical Center
[2]Division of Neonatology, University of Nebraska Medical Center

Background: Extremely low birth weight (ELBW) infants (< 1000g) have specialized nutritional needs to promote best outcomes, so identifying optimal nutrition therapies is critical. Previous studies indicate that late initiation of enteral feeds (>3 days) is associated with increased inflammation and adverse neonatal outcomes. Delayed breastfeeding after the first hour of life in term infants has also been associated with increased mortality. In consideration of these factors and the heterogeneity that exists between enteral feeding initiation in an ELBW population, there is a lack of studies examining the hour of life in which enteral feeds are initiated in ELBW infants. This study evaluates the feasibility of early initiation of enteral feeds in ELBW infants and describes the impact on time to reach full enteral feeds.

Methods: A retrospective chart review was conducted including ELBW infants born from June 2016 to July 2019 in a level III NICU. Infants with congenital or genetic anomalies or who transferred or deceased prior to 30 days of life were excluded. Feeding categories were defined as early (< 12 hours of life), moderate (12-24 hours), or late (>24 hours). The number of days to reach full enteral feeds was also analyzed, as defined by receiving a volume $\geq$ 145 mL/kg/day of human milk 24 kcal/oz feedings using human milk fortifier and a protein modular.

Results: 44 ELBW infants were included. The median time of enteral feeding initiation was 12.4 hours of life (min 4.1 hours, max 178.4 hours). Enteral feeds were started in the early category for 19 infants (43%), moderate for 19 infants (43%), and late for 6 infants (14%). The median time to reach full enteral feeds was 9.5 days of life within the cohort. The median time to reach full enteral feeds was 9 days for infants in the early category, 10 days for moderate, and 14 days for the late category.

Conclusions: These results indicate the feasibility of initiating enteral feeds within the first 12 hours of life in the ELBW infant population. Earlier start of enteral feedings—even by hours of life—results in a reduction in the number of days to reach full enteral feeds. These results may be considered in the development of feeding protocols and early enteral nutrition initiation in the ELBW infant population. More studies are needed to assess the impact of early initiation of enteral feeds on neonatal outcomes like growth and morbidities.