

IMPLEMENTATION OF NUTRITIONAL CARE BUNDLE IS ASSOCIATED WITH IMPROVED GROWTH IN PRETERM INFANTS BORN BEFORE 32 GESTATIONAL WEEKS

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Background and aims: Preterm infants are at risk of malnutrition and growth failure, among other neonatal morbidities. This study aimed to evaluate whether implementation of a nutrition care bundle is associated with growth and morbidity in very preterm infants.

Methods: This before-and-after study compared 87 very preterm infants (<32 gestational weeks) born 2018 (BG) with 75 infants born 2020 (AG), all treated at the same neonatal intensive care unit in the Czech Republic. A nutrition care bundle was implemented during 2019, comprising daily calculation of fluids using an online software, targeted fortification of breastmilk, and use of a standard concentrated parenteral solution. Anthropometric data was registered once weekly and perinatal data was prospectively registered for both groups.

Results: There were no differences in baseline characteristics between the groups. During postnatal days 1-14, parenteral fluid intake was significantly lower in the AG compared to the BG and conversely, enteral fluid intake was significantly higher in the AG. Weight z-scores decreased significantly less from birth to postmenstrual age 36 weeks in the AG (-0.8 [IQR -1.3 to -0.5]) compared to the BG (-1.5 [IQR -2.0 to -1.2]) and head circumference z-scores decreased significantly less in the AG (-0.8 ± 0.9) compared to the BG (-1.6 ± 1.1). A decrease in the rate of treated patent ductus arteriosus was noted in the AG ($P < 0.001$).

Conclusions: Implementation of nutritional care bundle was associated with improved postnatal growth and may reduce treatment-requiring patent ductus arteriosus in very preterm infants.