



Impaired Extrauterine Growth among Preterm Infants in Eastern Uganda

The Role of Intrauterine Growth Restriction

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Objective:

To evaluate the incidence of and risk factors for postnatal growth failure amongst very low birth weight infants in a neonatal unit in Eastern Uganda.

Background

Postnatal growth failure (PGF) is common in preterm and very low birthweight (VLBW) infants and is associated with impaired neurodevelopmental outcomes and growth. In high-income countries (HICs) parenteral nutrition, protein administration, early initiation of enteral feeds, donor human milk and breastmilk milk fortifier prevent PGF, but access to these interventions is limited in low-income countries (LICs). This study focused on evaluating the prevalence of PGF among VLBW infants within a level II neonatal unit (NNU) located in eastern Uganda.

Methods

This was a retrospective cohort study using in-patient records of VLBW infants admitted between 1 Jan 2018 and 31 Dec 2018.

- Infants with a birthweight <1500g, <24 hours old and spent ≥7 days in NNU were included.
- Weight Z-scores were calculated using the INTERGROWTH-21st standard. Intrauterine growth restriction (IUGR) was defined as weight Z-score at birth <-1.28 (birth weight <10th percentile).
- PGF was defined using two definitions: 1. Discharge weight Z score < -1.28 (discharge weight < 10th percentile); 2. Delta weight Z score ≥ -1.28.

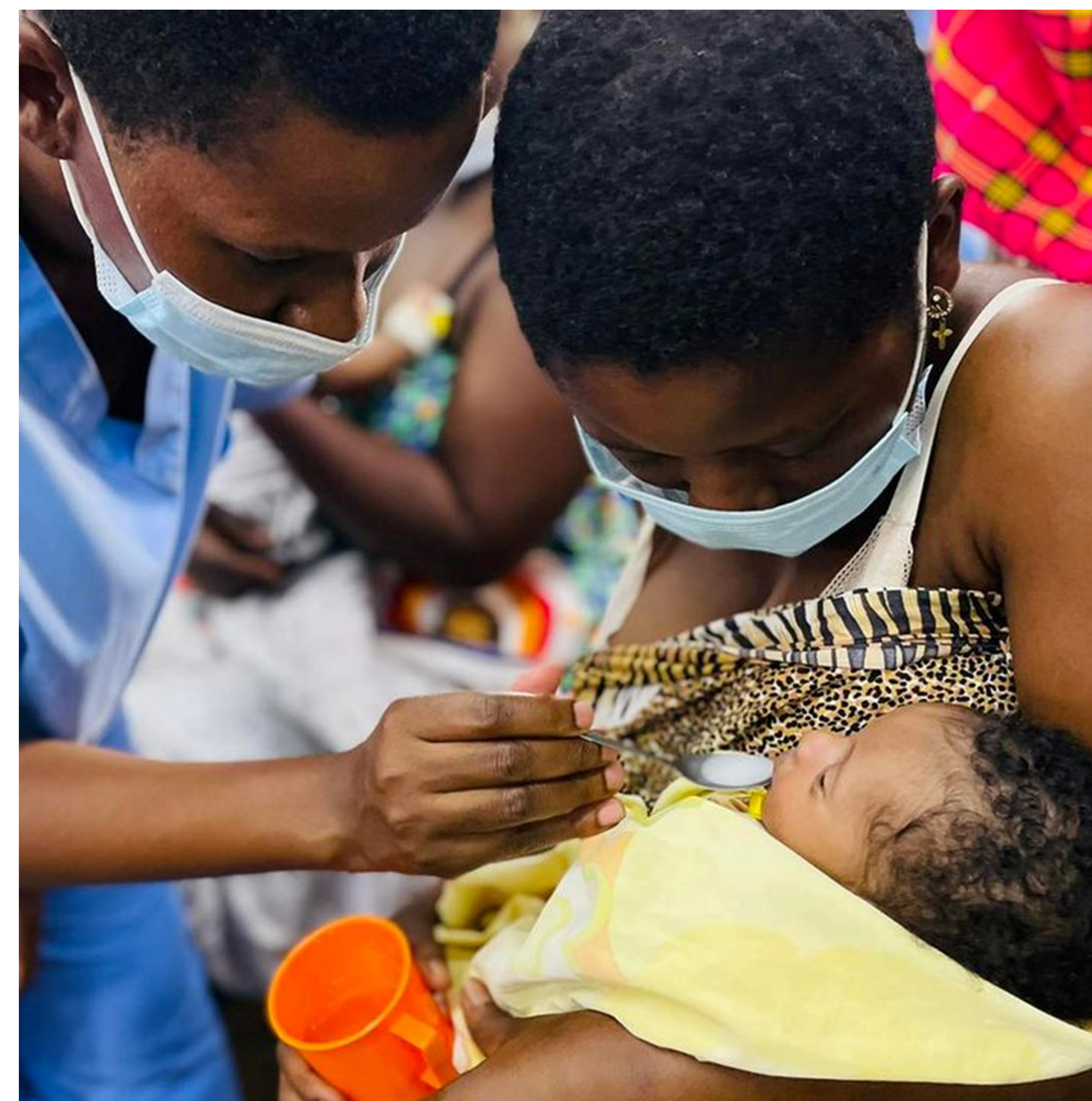


Fig 1. A healthcare worker teaching mother about feeding practices

Results

- 40.4% (42/104) of infants were IUGR, and IUGR rate increased with gestational age.
- At discharge, 76.0% (79/104) had experienced a ≥-1.28 change in their weight z-score and a total of 86.5% (90/104) had weight z-score <-1.28.
- Among these infants, 46.67% were born IUGR and had PGF, with an odds ratio (OR) of 7.89 (95% CI: 1.39, 44.77).

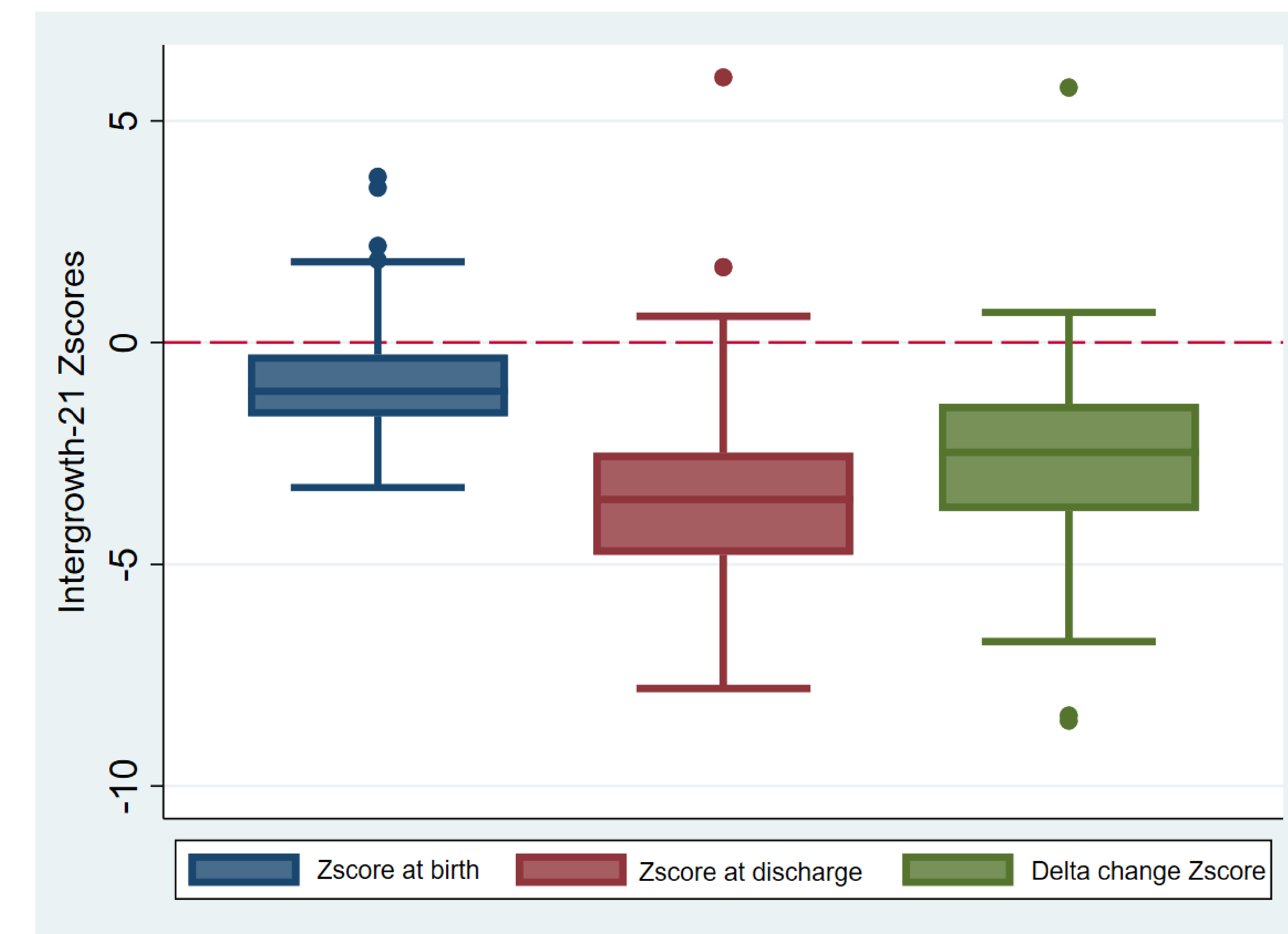


Fig 2. Z-scores at birth and at discharge Horizontal lines represent median.

Conclusion:

The high PGF rate in the study underscores the challenges of achieving sufficient growth and nutrition support using only a mother's own milk and the need for additional strategies for nutritional support and optimal growth in these vulnerable neonates.

