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Gastrointestinal motility in the very preterm infant and its implications for clinical care

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Background: Complete absorptive and electrical function of the gastrointestinal system develops late in gestation and consequently premature infants lack intestinal maturity. Hence, premature infants have slowed gastrointestinal motility compared to term infants, which hinders nutritional and growth outcomes. Several factors including gestational age, feeding practices and microbiota composition may influence gastric emptying in the preterm infant.

Objectives: This study aims to identify the prenatal, perinatal, and postnatal factors that influence gastrointestinal motility in the preterm infant. The primary objective is to establish the relationship between feeding and stooling behaviour in preterm infants <32 weeks gestation, in addition to exploring factors that influence this relationship.

Methods: This retrospective cohort study looked at a group of n=129 preterm infants <32 weeks gestation born at the Cork University Maternity Hospital (CUMH) between 2017 and 2021. Data was collected from the CUMH electronic record system and subsequently analysed using SPSS.

Results: Preterm infants with lower gestational ages stool less frequently in the first week of life compared to the second week (p=0.013). However, a univariate ANOVA, found that the primary feed type of maternal breast milk had the strongest influence over increased stooling frequency in the second week of life (p=0.009). There was also a positive correlation between preterm infants reaching full enteral feeds earlier and transitioning from meconium to normal stool earlier (p<0.001).

Conclusion & Future Work: Our results suggest that feed advancement can influence earlier transition to normal stool. Associations like these, between feeding regimens received and stooling behaviour in the early weeks of life can aid CUMH to identify patterns and optimize care of preterm neonates. Future work could look at how early stooling behaviour in the first two weeks of life affects stooling habits into the first two years of life.

Biography

Mariana Colussi-Pelaez is a medical student at the University College Cork, in Cork, Ireland. She completed her Bachelor of Science in Microbiology at Oregon State University in 2019. She will graduate from University College Cork in June 2023. She would like to pursue her medical training in Paediatrics in the United States. Her research interests include neonatology and the influence of the gut microbiota on infant health.

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