

ALTERATIONS IN THE GUT MICROBIOME DURING THE FIRST TWO MONTHS OF LIFE IN PRETERM, LOW-BIRTH-WEIGHT INFANTS

Juozas Kupcinskas

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Poster

Colorectal

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Longitudinal analysis of 819 stool samples from 115 preterm low-birth-weight infants over the first two months of life reveals that gut microbiome development is strongly influenced by delivery mode, gestational age, and clinical conditions including necrotizing enterocolitis.

KEY POINTS

- Bacterial communities in preterm low-birth-weight neonates began to stabilize between days 26 and 35 of life.
- Fifty-six bacterial genera including Bifidobacterium, Clostridium, Escherichia-Shigella, Klebsiella, Lactobacillus, and Streptococcus showed positive correlation with postnatal age, while 31 genera including Staphylococcus, Pseudomonas, and Bacillus were negatively correlated.
- Eighteen bacterial genera were associated with delivery mode, with Fusobacterium, Bacteroides, Enterococcus, and Streptococcus more common after vaginal birth and Staphylococcus, Acinetobacter, and Serratia associated with Caesarean section.
- Significant microbiome differences were associated with gestational age, maternal medication, and presence of necrotizing enterocolitis, with moderate differences observed between preterm low-birth-weight and full-term control infants.
- This study is relevant to neonatologists and researchers studying early-life microbiome development in vulnerable preterm populations.

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