

Intestinal microbiota and weight-gain in preterm neonates

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The involvement of the gut microbiota on weight-gain and its relationship with childhood undernutrition and growth has been reported. Thus, the gut microbiota constitutes a potential therapeutic target for preventing growth impairment. However, our knowledge in this area is limited. In this study we aimed at evaluating the relationship among early microbiota, growth, and development in preterm infants. To this end we assessed the levels of specific microorganisms by qPCR, and those of short chain fatty acids by mean of gas-chromatography, in feces from 63 preterm newborns and determined their weight-gain during the first months. The statistical analyses performed indicate an influence of the intestinal microbiota in weight-gain, with the levels of some microorganisms showing a significant association with the weight-gain of the infant. The levels of specific microbial groups during the first days of life were found to affect weight gain by the age of 1 month. Moreover, clustering of the infants on the basis of the microbiota composition at 1 month of age rendered groups which showed differences in weight z-scores. Our results suggest an association between the gut microbiota composition and weight-gain in preterm infants at early life and point out potential microbial targets for favoring growth and maturation in these infants. © 2017

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Colonization

Microbiota

Newborn

Premature-infant

Probiotics

Weight-gain

short chain fatty acid

Article

Bacteroides

Bifidobacterium

birth weight

breast milk

controlled study

Enterobacteriaceae

Enterococcus

feces analysis

female

gas chromatography

gestational age

human

infant

intestine flora

Lactobacillus

male

malnutrition

nonhuman

polymerase chain reaction

prematurity

scoring system

Staphylococcus

Streptococcus

weight gain

Weissella