

INFANT'S GROWTH THROUGHOUT THE FIRST YEAR OF LIFE AND MATERNAL PRE-PREGNANCY BODY MASS INDEX

E. Verduci, G. Radaelli, E. Salvatici, C. Paramitiotti, E. Riva, G. Banderali

Department of Pediatrics, San Paolo Hospital University of Milan, Milan, Italy

Aim: To assess whether an association may exist between maternal pre-pregnancy Body Mass Index (BMI) and infant's growth throughout the first year of life.

Methods: Prospective observational cohort study including 1246 at term, singleton, healthy newborns. Mothers were interviewed before discharge about pre-pregnancy weight, sociodemographic data, lifestyle and were given a diary to record the type of feeding during the study period. Maternal pre-pregnancy BMI was categorized according to the World Health Organization criteria as: underweight ($\text{BMI} < 18.5 \text{ kg/m}^2$), normal-weight ($18.5 \text{ kg/m}^2 < \text{BMI} < 25 \text{ kg/m}^2$) and overweight ($\text{BMI} \geq 25 \text{ kg/m}^2$). Infant's growth (weight, length, BMI) data were collected during visits scheduled at 1, 3, 6, 9, 12 months of life, and z-scores were calculated.

Results: Birth weight was lower in infants born to underweight (mean 3289 g, SD 384) than normal-weight (mean 3416 g, SD 408) and overweight mothers (mean 3426 g, SD 431) ($P < 0.05$). Throughout the first year of life, the infant's BMI z-score ranged between 0.37 and 0.77 in the whole sample but was significantly higher in infants born to overweight than underweight and normal-weight mothers from 6 months onwards (maximum $P=0.024$). Significance of difference decreased ($P=0.072$) after adjusting for confounders (breastfeeding, solid foods introduction and type, mother age, educational level). No overall significant difference occurred among underweight, normal-weight and overweight mothers for length z-score.

Conclusions: The infant's BMI z-score pattern throughout the first year of life may be associated with maternal pre-pregnancy BMI.