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Human milk macronutrient concentration during the first two months of lactation after preterm delivery

Objective: Breast milk is an optimal type of nutrition for term and preterm infant. A very few data were collected regarding content of macronutrients in human milk after preterm delivery. Objective of the study was to evaluate the amounts of protein, fat and carbohydrates in aggregate of human milk samples using mid-infrared human milk analyzer after preterm labour during the first two months of lactation.

Methods: Analysis of the donated milk samples between 24+0 and 35+6 gestational age (GA) designed as prospective observational cohort trial. Two milk samples were analysed every postnatal week up to the discharge from the hospital, week nine or loss of lactation. Analysis was performed using the MIRIS Human Milk Analyzer (MIRIS AB, Uppsala, Sweden).

Results: Total of 1917 human milk samples donated by 225 mothers after preterm labour was analysed. Group A (24-30 GA) contains 969 milk samples and the group B (31-35 GA) contains 948 milk samples. No difference in milk composition between the groups was identified. Mean true protein content decreased from 1.72 g/dL in group A and 1.65 g/dL in group B at the end of the first week of life to 1.1 g/dL in both groups at the end of the week three, and then remains relatively stable with mean values around 1.0 g/dL up to week nine. Contrary to the proteins mean content of carbohydrates and fat seems to be very stable during the whole observation with important inter-individual variability of fat amount which is the matter of energy content differences observed between the samples. Almost half of the all analysed samples (925-48.3%) had energy content less than 67 kcal/dL and protein content did not reach 1.5 g/dL in 1512 samples (78.9%).

Conclusion: There was no difference in the breast milk composition as a function of term of premature delivery. Protein content of preterm human milk is lower than expected and decreases during first three weeks of lactation.

Biography

Iva Burianova has completed her Pediatric Nutrition Scholarship in Second Medical School, Charles University, Prague, in 2001. She is a Consultant Neonatologist in Thomayer Hospital Prague. She has focused on neonatal enteral nutrition and breastfeeding and has published several articles on this topic in reputed journals.

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