

Titulo: Fatty acids percentage in sphingomyelin and phosphatidylethanolamine in mother's milk with a low DHA diet.

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RESUMEN

Introduction: Human milk provides infants polyunsaturated fatty acids (PUFAs) for growth and development.

Sphingomyelin (SM) esterifies mainly saturated and monounsaturated fatty acids, PUFAs are esterified mainly in phosphatidylethanolamine (PE). Accumulation of PUFAs in PE protects them from peroxidation.

Objetive

To assess PUFAs percentage distribution present in SM and PE in mother's milk with a low docosahexaenoic acid (DHA) diet.

Material and method

We performed a descriptive, cross-sectional study analyzing milk samples obtained from adult mothers attending Public Health System, 90 days after delivery (2017-2018). Food intake was assessed with a 24-hours reminder. Techniques were: gas chromatography, thin-layer chromatography and Fiske-Subbarow. The protocol was approved by the Institutional Research Review Board.

Results

The study included 14 milk samples from exclusively breastfeeding mother. Median age was 25 years (20.25-30). The most frequently consumed foods by mothers were: sunflower oil, beef, chicken meat, processed baked goods and dairy products. Complex lipids distribution was: 40.70 ± 5.11% of SM; 21.12 ± 2.32% phosphatidylcholine; 4.22 ± 1.25% phosphatidylinositol; 7.94 ± 1.96% phosphatidylserine and 26.03 ± 5.98% PE. Median DHA in milk was 0.13% and 0.42% arachidonic acid (ARA).

The fatty acids mean percentage and standard deviations in SM and PE respectively were: palmitic acid 34.45 (1.94) vs 5.38 (0.94), oleic acid 16.50 (4.07) vs 9.43 (4.05); linoleic acid 5.91(4.69) vs 9.05 (4.5). DHA in SM was not detectable but 55.33% (14.46) was found in PE.

Conclusion

Mother's milk with low DHA diet presented, 55% of DHA in PE but DHA in SM was not detected.