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The role of Mediterranean diet on human milk composition: The results of MediDiet study

Introduction & Aim: Human milk has evolved as the natural exclusive food for newborns during their first months of postnatal life; it fulfils all the nutritional requirements and it is related to a better short and long term outcome. The knowledge on how maternal diet and in particular the adherence to a Mediterranean-style diet may be reflected in composition of human milk is very limited. We know that maternal diet influences Fatty Acid (FA) composition of breast-milk with changes appearing within 8-10 hours after a meal intake. FA are important for neurodevelopment of newborn in early stages of extrauterine life. The MediDiet multicenter study aimed to evaluate how human milk anti-oxidative properties can be affected by the adherence to Mediterranean diet.

Methods: We sampled breast milk of 300 mothers from 5 sites to provide reference values of milk fatty acids in the population. In a period between 5 and 7 weeks after childbirth these women were asked to provide a sample of their freshly expressed breast milk. A validated food frequency questionnaire was submitted to all the eligible patients included in the study.

Results & Conclusion: The adherence to the Mediterranean diet was lower in the center and south of Italy than in the north. This result seems to be in line with the observation of a trend towards a decreasing adherence to the Mediterranean diet in Mediterranean countries in the last decades. Milk fat contained on average 22.5% palmitic acid, 39.2% oleic acid, 10.9% linoleic acid, 0.5% α-linolenic acid, and 0.3% docosahexaenoic fatty acid. The ratio of n-6 to n-3 long-chain polyunsaturated fatty acids in milk fat was 2.4. Oleic acid content is among the highest reported for any geographical region of the world and similar to an earlier Italian study by Marangoni et al. (2002) on a much lower number of samples. The ratio of n-6 to n-3 long-chain polyunsaturated fatty acids is also similar to the one reported by Marangoni et al. Such ratios have been implied to provide specific benefits for cardio-metabolic health.

Biography

Guido Moro has been Professor of Neonatology at the University of Milan, Italy and Director of the Department of Neonatal Pathology of Macedonio Melloni Hospital in Milan. His main field of research is infant nutrition, with particular interest to very low birth weight infants feeding, human milk and human milk banks. He has published more than 250 scientific papers in international journals. In 1985 he founded the Human Milk Bank of Milan, the most technologically advanced human milk bank in Italy. Presently he is the President of the Italian Association of Donated Human Milk Banks (AIBLUD), which coordinates the activity of the 37 existing banks in Italy. He has been the first President of the European Milk Bank Association (EMBA). In 2005 he received the "Gold Medal" from the City of Milan (the highest honor for people working in this city), for his scientific activity and his interest and involvement in social field.

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