

CLINICAL NUTRITION

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Study on the fatty acid composition in breast milk during the period of exclusive breast feeding

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Milk fat serves as the main contributor for energy, essential fatty acids and fat-soluble vitamins for exclusively breastfed infants. Data on fatty acid composition in human milk of Sri Lankan mothers is limited. Present study was conducted to determine the composition of fatty acids in breast milk during the period of exclusive breastfeeding and to assess whether the fat mass of lactating mother influences the fatty acid composition of breast milk. In this cross sectional study, milk samples from healthy lactating mothers (n=48) were collected in three phases of lactation (0-2, 2-4 and 4-6 months) and analyzed by Gas Chromatography with a flame ionization detector. Mother's body composition was determined by deuterium dilution technique. Composition of 17 fatty acids in breast milk was detected. Lauric acid was the most abundant fatty acid (22.3±5.2%) in breast milk of these mothers. Oleic acid, Palmitic acid and Myristic acid contents were also higher (21.9±4.4, 19.2±2.6 and 15.7±2.7 respectively). The percentages of C18, C14:1 and C20:3n6 were significantly different between the studied three phases of lactation. Mothers' age showed a significant positive correlation with the percentage of Docosapentaenoic acid. Mother's body weight was positively correlated significantly to the percentages of C14:1, C16, C18, C18:1c, C20:4n6, C22:5n3 and C22:n3. C16:1 showed positive significant correlations to the %FM of the mother. Fatty acid composition of the breast milk of Sri Lankan mothers was considerably varied with respect to C8, C18:1t, C18:3n3, C20, C20:3n6, C20:4n6, C22:5n3 and C22:6n3. Although the percentages of arachidonic acid and DHA were higher, linoleic and linolenic acid percentages were fairly low. Supplementation of these essential fatty acids during lactation is recommended.

Biography

Thushari Bandara has completed her BSc and MPhil and recently submitted her PhD thesis. She is a Senior Lecturer at the Faculty of Medicine, University of Ruhuna, Sri Lanka and the Coordinator of the BSc Medical Laboratory Science Degree Program of the Faculty of Medicine, University of Ruhuna. She has published more than 12 research articles in reputed journals and presented 12 abstracts at reputed foreign and local scientific conferences.

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