Fatty acid composition in the breast milk of Sri Lankan mothers during exclusive breastfeeding

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Introduction: Published data on the fatty acid (FA) composition of breast milk (BM) of Sri-Lankan mothers are limited.

Objectives: To report the FA composition in BM within the first 6 months of lactation and to study whether the fat mass of lactating mothers would influence FA composition of their BM.

Method: During the present cross-sectional study, mid-stream milk samples from 48 exclusively breastfeeding mothers were collected and analysed by gas chromatography. Deuterium dilution technique was used to measure maternal body composition.

Results: Most abundant FA was lauric acid (22.3±5.2%). Oleic acid, palmitic acid and myristic acid were also found in high amounts (21.9±4.4%, 19.2±2.6% and 15.7±2.7%, respectively). C18, C14:1 and C20:3n6 percentages were significantly different in the three phases of lactation (0-2, 2-4 and 4-6 months). Percentage of docosapentaenoic acid showed a significant positive correlation with the age of the mother. Amounts of C14:1, C16, C18, C18:1c, C20:4n6, C22:5n3 and C22:n3 were positively correlated significantly to mother's body weight. Further, C16:1 showed a positive significant correlation to the percentage FM of mother.

Conclusions: FA composition of BM from SriLankan mothers showed wide variations in C8, C18:1t, C18:3n3, C20, C20:3n6, C20:4n6, C22:5n3 and C22:6n3. Amounts of arachidonic acid and DHA were high but linoleic and linolenic acid percentages were low.

Key Words: Human milk, Fatty acids, Essential fatty acids, DHA, Arachidonic acid