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Effect of different levels of oral bovine lactoferrin from iron-fortified formula on iron metabolism of anemic infants

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Objective: To evaluate the effect of iron-fortified formula with different concentrations of bovine lactoferrin (bLF) on improvement of the anemic status in term infants who previously breast-fed.

Method: In this prospective multi-center controlled intervention study, a total of 108 infants aged 6-9 months who previously breast-fed but weaned were selected. All subjects were divided into three groups with the sequence of outpatient: fortified group 1 (FG1) with a bLF concentration of 38 mg/100 g, FG2 with 76 mg/100 g, FG0 with free of bLF. The intervention duration were 3 months. The levels of weight, height and head circumference and the concentration of Hemoglobin (Hb), Serum Ferritin (SF), serum Transferring Receptor (sTfR) were measured and sTfR-SF index (TFR-F index) and Total Body Iron Content (TBIC) were computed before and after intervention, respectively.

Result: The primary outcome measures were obtained from 96 infants (35, 33 and 28 for FG0, FG1 and FG2, respectively). After one month intervention, the changes of Hb level showed no statistical difference [(113.18 \pm 10.2), (109.78 \pm 8.3) vs. (111.83 \pm 8.6) g/L, for FG0, FG1 and FG2, respectively] among the three groups, however, the Hb level of infants in FG2 were significantly higher than those of infant in the other two groups after 3 months intervention [(116.49 \pm 8.0), (116.58 \pm 6.4) vs. (121.50 \pm 5.1) g/L, for FG0, FG1 and FG2, respectively] (p<0.05).

Conclusion: The present data indicated that the formula fortified with bLF by 76 mg/100 g formula positively and additionally affected the Hb of anemic infants who previously breastfed when compared with bLF fortified by 38 mg/100 g formula and formula without bLF.

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