

ENHANCED FEEDING AND HYPOPHOSPHATEMIA IN VERY-LOW-BIRTH-WEIGHT INFANTS DURING THE FIRST WEEK OF LIFE

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Background: Nutritional regimens high in protein and energy have been introduced to very-low-birth-weight (VLBW) infants to improve growth and clinical outcome.

Aim: To evaluate two standardized feeding strategies on phosphate levels in VLBW infants during the first week of life.

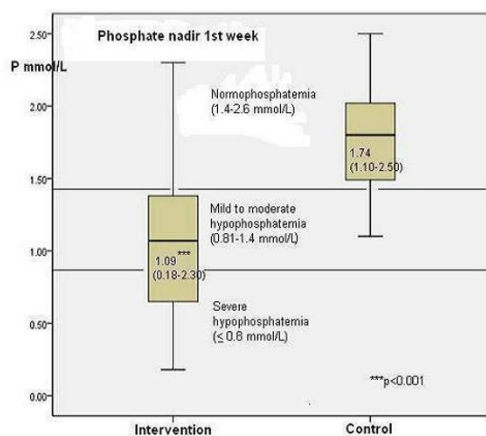
Methods: Fifty infants (< 1500g) were prospectively randomized to either an enhanced (intervention) or a standard (control) feeding protocol within 24 h after birth. Results are presented as means (ranges). T-test, Fisher's Exact Test and Pearson's correlation, r, were applied.

Results: Main characteristics and 1st week nutrient supply are presented below.

	Birth Weight (g)	Gestational Age (weeks)	Amino Acids(g/kg/d)	Fat (g/kg/d)	Energy (kcal/kg/d)
Intervention	940 (460-1311)	28.2 (25.0-33.6)	3.7 (3.1-4.0)	3.9 (2.9-5.5)	90.7 (80.3-105.5)
Control	1035 (426-1414)	28.2 (23.0-32.6)	2.5 (1.9-4.8)	3.3 (1.9-4.8)	78.1 (63.7-93.9)
p-value	0.19	0.92	<0.001	<0.01	<0.001

[Table 1]

Nine infants in the intervention group, and none in the control group developed severe hypophosphatemia (phosphate ≤ 0.80 mmol/L), ($p < 0.001$).



[Fig. 1]

Phosphate levels correlated with birth weight ($r=0.41$, $p < 0.01$), and 5 out of 6 infants in the intervention group with z-score for weight < -2 had severe hypophosphatemia. Furthermore, phosphate and potassium levels correlated significantly ($r=0.61$, $p < 0.001$).

Conclusions: Enhanced feeding in VLBW Infants may promote hypophosphatemia; the hallmark of refeeding syndrome. Adequate supply of phosphorus and potassium may be essential during the initial phase of nutrition therapy.