

A Multi-Arm Randomized Trial Comparing the Weight Gain of Very Low Birth Weight Neonates: High Glucose versus High Protein Intake

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Abstract : As Very Low Birth Weight (VLBW) neonates cannot tolerate enteral feeding, parenteral nutrition (PN) must be administered shortly after birth. To find an optimal combination of nutrition, in this study, we compare administering high glucose versus high protein intake as a component of total parenteral nutrition (TPN) to test their effect on birth weight (BW) regain in VLBW. This study employs a multi-arm randomized trial: 145 newborns with BW < 1500 g were randomized to control (C) or experimental groups: high glucose (G) or high protein (P). All samples in each group received the same TPN regimens except glucose and protein intake: Glucose was provided by dextrose water (DW) serum: 7-15 g/kg/d (10% DW) in groups C and P versus 8.75-18.75 g/kg/d (12.5% DW) in group G. Protein provided by amino acids 3 g/kg/d for groups C and G versus 4 g/kg/d for group P. Outcomes (weight, height, and head circumference) was monitored on a daily basis until the BW was regained. Data has been gathered recently and is being processed. We hypothesize that neonates with higher amino acid intake will result in sooner BW regain than other groups. The result will be presented at the conference. The findings of this study not only can help optimize nutrition, cost reduction, and shorter NICU admission of VLBW neonates at the hospital level but eventually contribute to reduced healthcare-associated infections (HAIs) and an improved health economy.

Keywords : very low birth weight neonates, weight gain, parenteral nutrition, glucose, amino acids

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