

Nutritional Management of Very Low Birth Weight Infants

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Abstract: *Background: Normal long-term neurodevelopmental outcome of very low birth weight infants requires adequate nutrition. The latter depends on a precise nutritional protocol and regular checks of adherence to its content. The scope of this study was to reveal factors with potential negative influence on adequate nutritional support of very low birth weight infants in a level IV neonatal intensive care unit. Methods: A detailed chart analysis investigated the adherence to the local protocol for enteral and parenteral nutrition and the resulting growth of very low birth weight infants stratified by predefined criteria in four 250 g strata.*

Results: The median [IQR] birth weight was 1065 (439) g, gestational age was 29.1 (3.4) weeks. Weight gain was 14.8 g/kg/d, which was equivalent to the lower range of intrauterine growth. Hence, z-score of 0.59 at birth dropped to -1.39 at discharge. Chart analysis revealed six reasons for inadequate growth:

1) Delayed postnatal start of parenteral protein and fat supplementation on day two; 2) Slower than intended advancement of oral feeds by in median 7.8 instead of the proposed 20 mL/kg/d; 3) Failure of using the most current body weight for calculation; 4) Inadequate total protein intake: 7.3 g/kg/d cumulative protein deficit already on day 8, the intended 4 g/kg/d of protein were not reached on 59% of all hospital days; 5) Reduction of milk supplementation ahead of schedule; 6) Interruption of parenteral nutrition during infusion of antibiotics. Conclusion: To achieve optimal quality of care regular reviews of adherence to internal guidelines are essential. Certain errors in management may only be detected by regular independent detailed analysis of charts and daily practice

Keywords: *neurodevelopmental*

