Background and Aims Early administration of parenteral amino acids (AA) has been shown to limit catabolism and improve growth in extremely low birth weight (ELBW) infants. This study aimed to evaluate an earlier, more aggressive administration of amino acids, was safe and well-tolerated, without clinically significant differences in metabolic acidosis or blood urea nitrogen (BUN).

Methods The 46 ventilator-dependent preterm infants less than 1000g were retrospectively enrolled. The Early group received ≥3 g/kg/d amino acids, while the Late group did not received a minimum of ≥3 g/kg/d parenteral AA at ≤3 days of age.

Results An earlier, more aggressive administration of amino acids (≥3 g/kg/d amino acids at ≤3 days of age), was safe and well-tolerated, without clinically significant differences in metabolic acidosis or BUN. There is no correlation between amino acid intake and BUN in ELBW infants within 7 days of life. Using multiple regression analysis, gestational age showed a significant negative correlation with BUN concentrations in ELBW infants within 7 days of life.

Conclusions High BUN in the early postnatal period might be related not only to amino acid oxidation and the infant’s immaturity but also additional combined factors other than amino acid intolerance. Future studies are required to determine whether early and aggressive administration of amino acids is enough for optimal growth and neurodevelopmental outcome of ELBW infants.

DOES ENTERAL PROTEIN INTAKE AFFECT RENAL GLomerular AND TUBULAR FUNCTIONS IN VERY LOW BIRTH WEIGHT INFANTS?

objectives and aim: Very low birth weight infants require 3–4 g/kg/day protein intake to provide satisfactory postnatal growth rates and neurodevelopmental outcomes however they have fewer functional nephrons thereby, increasing vulnerability to impaired renal functions. The aim of this study was to investigate the effect of different amounts of enteral protein intake during the fortification of human milk on renal glomerular and tubular functions.

Material and Methods Preterm infants were randomized into three groups regarding their daily protein intakes as standard fortification (3 g/kg/d), moderate fortification (3.5 g/kg/d) and aggressive fortification (3.6 g/kg/d) groups. Serum urea, creatinin (Cr), Cystatin C (Cys-C) and urinary β2 microglobulin (β2M) levels were assessed and compared between groups.

Results Serum urea, Cr, Cys-C and urinary β2M levels were similar in all three groups both on discharge and postnatal day 14 (p>0.05). Mean Cr and β2M levels were significantly lower on discharge (p<0.05) while Cys-C levels did not differ in time (p>0.05).

Conclusion Enteral protein intake up to 3.6 g/kg/d did not altered the tubular and glomerular functions in very preterm infants. However, the long term renal effects in these infants maintained on a high protein intake remain unknown and should be addressed in future studies.