Parenteral nutrition (PN) amino acid (AA) formulations predate recent recommended protein intakes. AA were categorised as essential, conditionally essential (in VPI) and non-essential. We hypothesised hyperalimentation would prevent low plasma levels of conditionally essential AA (CEAA).

**Methods** Infants (<1200 g; <29 weeks) were randomised to start SCAMP or remain on control before day 5. Daily parenteral (AA) and enteral protein intakes were calculated from daily nutritional data. Plasma AA levels were measured weekly in PN-dependent infants by ion-exchange chromatography.

**Results** Infants were randomised to SCAMP (n = 74) and control (n = 76) groups. The mean difference (95% confidence interval) in total protein intake (g/kg) was 8.7 (6.0–11.3) d1–28. All essential AAs (phenylalanine, lysine, valine, leucine, isoleucine, methionine, threonine, histidine and tryptophan) were within or above the reference range (RR) in both groups. Plasma arginine/cysteine levels (week 2) were below RR in both SCAMP (n = 45) and control (n = 62) infants (Table 1). Plasma cysteine levels (week 3) were below RR in both SCAMP (n = 39) and control (n = 36) infants.

**Conclusion** Despite hyperalimentation and increased protein intake, PN-dependent VPI remain biochemically deficient in some conditionally essential AAs.

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**Abstract PO-0587**

**NUTRITIONAL MODIFICATION TO DECREASE THE EXTRATERINE GROWTH RESTRICTION IN VERY LOW BIRTH WEIGHT INFANTS**

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**Background and aims** Extraterine growth restriction (EUGR; ≤10th percentile of intrauterine growth expected in accordance with the estimated gestational age) is a common problem in preterm infants. After birth, nutrition in preterm infant is dependent on externally administered nutrition and many preterm infants experience significant energy and nutrition deficits.

We modified our nutrition protocol and evaluated the incidence of EUGR and growth status.

**Methods** A prospective observational cohort study compared infants ≤1,500 g before (n = 37) and after (n = 50) modification of nutrition protocol. Modification included early starts of macronutrients with higher goal, earlier adding of human milk fortifier and higher goal of daily administered calorie. We evaluated demographics, enteral feeding, growth parameters, laboratory data and discharge outcomes. Differences in subgroups of infants ≤1,000 g and 1,000–1,500 g were also assessed.

**Results** Modified nutrition protocol reduced the incidence of EUGR at 36 weeks gestational age (GA) (91.8% vs. 66.0%, p = 0.005) and at discharge from NICU (89.1% vs. 56.0%, p = 0.001). EUGR was significantly reduced in infants 1,000–1,500 g and trended toward reduction in infants <1,000 g. Height at