Results 166 children included aged 5.1±0.1 years. 133 preterm-born children, born: 29.2±1.4 weeks gestation, 35 full-term children aged five.

Systolic BP (sBP) was 97.5±7.1 mmHg in preterm-born children versus 92.6±6.1 mmHg in full-term controls, p=0.0001. In preterm-born children, sBP increased by (βSD): 2.2±1.0 mmHg for each gram/kg increase in proteins/day on day 28, and decreased by –3.0±1.4 in case of bronchopulmonary dysplasia, after adjustment on gender and height at five years.

cGFR was 176.4±71.1 mL/min/1.73m² at five in preterm-born children. It was significantly decreased when children had presented hyaline membrane disease or necrotising enterocolitis, respectively (βSD): –17.6±6.7 and –25.7±10.4 mL/min/1.73m². cGFR at five was not associated with neonatal nutrition.

14.4% preterm-born children had an albumin ratio >2 mg/mmol vs. 11.1% full-terms, p=0.7.

Renal volume, absolute or relative, at five years was negatively correlated to protein intakes from day 14 onwards in the neonatal period: R= –0.69, p=0.006.

Conclusion Protein intakes in the neonatal period are associated to an increased BP and decreased renal volume in five year-old preterm-born children.

Background and Aims Parenteral nutrition (PN) is an integral part of neonatal intensive care, especially in the early nutritional support of very low birthweight (VLBW) newborns. However, it is associated with potentially serious complications such as sepsis and metabolic derangement. The aim of the study was to review PN use and complications in VLBW newborns at Royal Bolton Hospital with specific European Society of Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) guidelines as the standard.

Methods PN use was reviewed in all VLBW newborns who received PN for more than 1 day during January 2009 to December 2010. ESPGHAN standards audited were the time of commencement of PN and composition of the PN bag.

Results Of the 42 VLBW newborns included, the median gestational age and weight was 27th weeks and 923g respectively. In this group, 24% of newborns met the ESPGHAN standard for amino acid commencement and 88% for lipid commencement. The glucose and phosphate content of the PN bag did not match ESPGHAN standards as the glucose content was higher and phosphate content lower than recommended. Most common PN complication was hyperglycaemia (64%), followed by hypophosphataemia (45%) and sepsis (38%). Coagulase negative Staphylococci were the most common organism cultured (94%).

Conclusion There was a delay in commencement of PN. To achieve full compliance with ESPGHAN guidelines, amino acids and lipids should be commenced as recommended. Modifying constituents of the PN bag may help reduce complication rates of hyperglycaemia and hypophosphataemia.