Background Hyperalimentation describes the increase in glucose, amino acid (AA) and lipid intake designed to overcome postnatal growth failure in preterm infants. We have previously shown increasing parenteral AA intake increased 14/22 individual AA levels with only tyrosine lower. Hyperalimentation increases hyperglycaemia requiring insulin treatment. We hypothesised insulin administration may increase AA utilisation so lowering AA levels.

**Aim** To compare the plasma AA profiles in preterm infants with insulin-treated hyperglycaemia with those whose did not receive insulin.

**Methods** Infants <29 weeks gestation were originally randomised to receive hyperalimentation (25% more glucose, 4g/kg/day versus 3g/kg/day protein/lipid) or a control regimen within 5 days of birth with head growth as the primary outcome. The study protocol recorded actual nutrient intake and parenteral nutrition "intolerance" including hyperglycaemia, insulin use and AA profiles. AA levels were measured on day 9 (ion exchange chromatography).

**Results** 118 AA profiles were obtained from 142 infants on day 8–10. Secondary analysis restratified data to compare insulin (n=57; hyperalimentation n=37) with no insulin (n=61; hyperalimentation n=20) treatment. Infants receiving insulin were of lower gestation/birthweight (p<0.01) and received more protein (3.0g/kg/day versus <2.5g/kg/day). Insulin-treated group had lower lev-

**Conclusion** Preterm infants with insulin-treated hyperglycaemia have lower AA levels on day 8–10 despite lower birthweight, gestation and higher protein intake. This suggests exogenous insulin may improve AA utilisation for protein synthesis.
Conclusion Otherwise stable, well developing former very low birth weight preterm infants are at risk for glucose instability, generally considered as unfavourable. It remains unclear whether this instability is likely to influence long-term outcome and whether continuous feeds are preventive.

SIGNIFICANCE OF HIGH ALKALINE PHOSPHATASE LEVELS WITHIN FIRST TWO WEEKS OF LIFE AMONG EXTREMELY PRE-TERM BABIES


Background Serum alkaline phosphatase levels (S-ALP) are often high among extremely preterm babies before first two weeks of life. It is not certain whether this represents increased physiological bone turn-over or is a predictor for osteopenia of prematurity.

Aim To study the relationship between osteopenia of prematurity and peak S-ALP levels with in first two weeks among pre-term babies born before twenty-nine weeks gestation.

Methods We evaluated seventy-three extremely pre-term babies born before twenty-nine weeks gestation who were admitted to tertiary neonatal units in Leeds, UK from 01/01/2009 to 31/01/2011. S-ALP, calcium and inorganic phosphate were checked regularly while they were in the neonatal unit. Forty out of seventy-three babies had radiographs performed after five weeks post-natal age and were reported by radiologist.

Results In our cohort of seventy-three extremely pre-term babies, 55% had peak S-ALP levels exceeding 1200 IU/l (four times the upper limit of normal for adults) with in first two weeks. Infants who developed osteopenia had significantly lower gestational age and birth weight, and were significantly more likely to receive post-natal steroids. Radiologically proven osteopenia developed in 74% of infants with peak S-ALP exceeding 1200 IU/l compared to 35% of infants with peak S-ALP below 1200 IU/l before two weeks post-natal age (p-value 0.014).

Conclusion S-ALP exceeding 1200 IU/l with in two weeks post-natal age is associated with 2.1 fold increased risk of development of osteopenia in extremely pre-term infants.

EFFECT OF MODE OF DELIVERY ON MORTALITY AND MORBIDITY IN VERY LOW BIRTH WEIGHT NEONATES WITH RESPIRATORY DISTRESS SYNDROME

A Dursun, BS Karagol, N Hakan, N Karadag, D Dilli, S Beken. Neonatology, Dr Sani Ulus Maternity and Children’s Health and Diseases Training and Research Hospital, Ankara, Turkey

Background & Aim: It is known that wet lung syndrome and pulmonary maladaptation are more frequent in infants delivered by cesarean section while the effect of mode of delivery on RDS is unknown. In this study, we analyzed the effect of the mode of delivery on RDS outcome in very low birth weight (VLBW) neonates.

Methods Data of all the VLBW neonates with respiratory distress syndrome (RDS) between 2007 and 2012 was retrospectively analyzed. Gestational age, gender, birth weight, mode of delivery, necrotizing enterocolitis (NEC), intracranial bleeding (ICH), patent ductus arteriosus (PDA), retinopathy of prematurity (ROP), bronchopulmonary dysplasia (BPD) were noted.

Results A total of 186 newborns were diagnosed as VLBW neonates with RDS among the 5980 neonates hospitalized in NICU. Mean birth weight and gestational age were 1058±261 grams and 28±2.7 weeks, respectively. Cesarean delivery rate was 62.7%. There were no differences with respect to birth weight, gestational age and gender between mode of delivery. There was no significant relationship between the NEC, PDA, ROP, BPD and mode of delivery. Also no significant relationship between the mode of delivery and mortality was determined. On the other hand, ICH was significantly higher in neonates delivered vaginally (48% vs. 31%, p<0.05).

Conclusion Mode of delivery has no effect on the mortality and morbidity of RDS in VLBW neonates but ICH was significantly higher in normal vaginal delivery group. Therefore, mode of delivery should be decided on the basis of obstetrical indications.

MECONIUM/STOOL AND URINARY PATTERNS OF HEALTHY TURKISH NEWBORN

S M Kayran, E Ergülu, F G Kayran, S Sazak, B Gurakan. 1Department of Pediatrics; 2Department of Pediatric Surgery; 3Department of Pediatrics, American Hospital; 4Department of Pediatrics, Ministry of Health, Okmeydani Training Hospital; 5Department of Pediatrics, Division of Neonatology, American Hospital, Istanbul, Turkey

Background and Aims Routine follow-ups of healthy newborns for up to 48 h for those delivered by normal vaginal delivery (NVD) and for up to 96 h for those delivered by cesarean section (CS) are highly recommended as they facilitate the early detection of certain problems.

Objectives To investigate the meconium/stool and urinary patterns of healthy Turkish neonates, and to determine whether they correlate with delivery mode, birth weight and feeding method and frequency.

Methods Newborns with a gestational age of ≥ 34 wk were included. The frequency of meconium/stool and urine passage and the delivery mode, birth weight and feeding method and frequency were recorded throughout their hospital stay.