health, e.g. osteoprotegerin (OPG), s-RANKL and markers of nutritional status, e.g. somatomedin I (IgF I), leptin in malnourished infants.

The study comprised of 86 infants (42 boys and 44 girls) between the 4th and 7th months of age. According to their position of body weight and BMI at percentile charts for sex and age two groups were created: group I consisted of 54 malnourished infants with body weight and BMI (11.9) < 3rd percentile, group II consisted of 32 infants with body weight and BMI (15.5) between the 10th and 90th percentile. Biochemical investigations: OPG (pmol/l), s-RANKL (pmol/l), IgF I (ng/ml) and leptin (ng/ml) were performed in all the infants. The study protocol was approved by the Ethics Committee of Medical University of Lublin.

Statistical analysis was performed with t-Student and Spearman's correlation rank tests. $P < 0.05$ was regarded as significant.

Results: There were no statistical differences confirmed between the level of OPG and IgF I in the studied groups ($p > 0.05$). Statistical difference was confirmed for the level of leptin and s-RANKL between groups I and II ($p < 0.001$, $p < 0.05$ respectively). In malnourished infants (group I) statistically significant correlation was detected between the level of s-RANKL and IGF I ($r = 0.39$, $p < 0.05$).

Conclusion: Results of our study confirmed that malnutrition may influence bone metabolism in infants.

1055

ALL-IN-ONE VERSUS TWO-COMPARTMENT PARENTERAL NUTRITION IN EXTREMELY PRETERM INFANTS < 27 WEEKS GESTATION AND < 1000 G BIRTHWEIGHT (ELBWI)

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Background and aims: Evidence suggests standardized total parenteral nutrition (TPN) confers benefits over individualized TPN in terms of availability, nutritional intake, cost-effectiveness

and maybe patient safety (e.g. infections). However, it is unclear whether all-in-one or two-compartment (lipid separate) standardised preparations are more beneficial. This study aims to specifically address this question in a group of ELBWI.

Methods: A retrospective matched-pair cohort analysis was carried out of 25 ELBWI ≤ 27 weeks gestation, born at the Royal Sussex County Hospital, Brighton (UK), between January 2005 - December 2006 and January - December 2008. The early cohort received all-in-one TPN, while the later received two-component. They were matched for gestation, birth weight, admission duration, age at initiation and duration of TPN, and additional enteral feeds. Small for gestational age infants and infants with congenital anomalies were excluded. Clinical outcomes were daily weight gain, infectious and metabolic complications, and oxygen requirement at discharge. Daily cost of treatment was also compared.

Results: There was no statistically significant difference in daily growth, triglyceride and bilirubin levels, oxygen requirement at discharge or financial cost.

There was a statistically significant increase in episodes (5 [range 3-9] vs. 3 [range 1-6]; $p = 0.016$) and days of antibiotic treatment (33 [range 14-62] vs. 20 [range 5-51]; $p = 0.017$) in the all-in-one group.

Conclusion: All-in-one TPN seems to increase the risk of infection without conferring any clinical or economic benefits. Its use in ELBWI should probably be abandoned.

1056

CARDIOVASCULAR DISEASE SECONDARY TO VITAMIN D DEFICIENCY : CASE SERIES OF THREE CHILDREN

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Deficiency of vitamin D can result from a number of factors like inadequate dietary intake, coupled with inadequate sunlight exposure and disorders that limit its absorption. Although the most recognised complication of deficiency is musculoskeletal, there is growing awareness of its impact on the cardiovascular system.

We present a series of three cases of Vitamin D deficiency and its associated cardiovascular complications.

Case 1: This 6 month girl of African descent presented to the emergency department in cardiac failure. The echocardiogram showed grossly dilated heart with impaired function. On evaluation she was found to have vitamin D deficiency and responded well to calcium, vitamin D, diuretics and digoxin.

Case 2: This two year girl who had been treated for dilated cardiomyopathy secondary to vitamin D deficiency was brought to the emergency department in cardiac arrest. Her post-mortem examination revealed grossly dilated cardiomyopathy with extensive calcification of the conduction pathways.

Case 3: This 15 year old boy of African descent was being evaluated for genu valgum. His evaluation revealed hypocalcemia, vitamin D deficiency and a prolonged QT interval. Echocardiogram was unremarkable. He was started on Vitamin D and calcium. His QT interval normalised.

Conclusions: Dilated cardiomyopathy secondary to vitamin D deficiency can definitely be prevented and does have a better prognosis than idiopathic dilated cardiomyopathy. Although the risk of Vitamin D deficiency is greater in individuals with increased skin pigmentation, recently there has been a resurgence of vitamin D deficiency in the developed world, and this has become a global problem.

1057

NUTRITIONAL DEFICIT AMONG EXTREMELY LOW BIRTH WEIGHT INFANTS IS EVITABLE

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Postnatal malnutrition and growth retardation were shown as inevitable consequence of current recommendations in preterm infants.

In 2006, we modified our nutritional guideline:

-Intravenous protein and lipids started at higher rates and increased quicker.

-Human milk fortified with EOPROTINE 4% and LIQUIGENE 4 mL/d when enteral feeding reach 100 mL/kg.d

-Introduction of preterm formula fortified with EOPROTINE 2% for up to 50% of the volume fed if growth was insufficient.

Objectives: To compare energy and protein cumulative deficits over the first seven weeks of life.

Method: Optimal energy and protein intakes were set at 120Cal/kg.d and 3g/kg.d respectively and used to calculate positive cumulative deficits. We compared 2 groups of ELBW infants below 28 weeks born in 2005 and 2009 who stayed at least 7 weeks in our unit. Results are reported as median (Q1, Q3). Mann-Whitney tests were performed for each criteria.

Results: Groups were not different for GA ($p=0.277$) and BW ($p=0.106$). At the end of the 1st and the 7th week, energy and protein deficit were significantly reduced in the 2009 group.

Energy (Cal/kg): W1:419(378, 450) *versus* 375(327, 421), $p=0.002$; W7: 983(724, 1355) *versus* 48(-270, 484), $p<0.01$

Protein (g/kg): W1: 5.77(5.06, 7.72) *versus* -0.19(-1.4, 0.65), $p<0.01$; W7 : 1.14(-6.55, 6.68) *versus* -18.72(-27, -12.62), $p<0.01$

Conclusion: Higher parenteral intakes and close attention to enteral feeding allowed a reduction of nutritional deficit. Nonetheless, potential clinical effect had to be studied.

1058

IMPROVED CATCH UP GROWTH IN MALE PRETERM AGA INFANTS WITH INCREASED EARLY PROTEIN AND MINERAL INTAKE

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Background: Optimal protein intake improves weight gain whereas sufficient intake of calcium (Ca) and Phosphate (P) is necessary for bone mineralization and gain in length.