However, it has been suggested that neonates exposed to hypoxic injury are at increased risk of developing necrotizing enterocolitis (NEC) and so feeds should be withheld until re-warming.³

A national survey was performed to gain insight into current approaches towards enteral feeding during therapeutic cooling. **Methods** Hospitals were contacted by telephone and asked standardised questions about nutritional practice during cooling. 42 of the 47 units to provide cooling in the UK supplied information.

Results 67% of hospitals had no guidelines or had guidelines that failed to provide information with regards to starting enteral feeds during cooling.

79% do not give enteral nutrition during cooling. Of these, 24% of guidelines cited risk of NEC/GI complications as justification. 70% offered no reasoning for the recommendation.

In these units, 45% began patients on TPN ($\pm$ lipids), while 55% provide only IV fluids.

No units give full enteral nutrition, however 21% of units provide trophic feeds, preferentially using expressed breast milk most frequently at a rate of 1 mL 1–4 hly, with supplemental IV fluids and no adjunctive TPN.

Conclusion This survey concludes that there is no uniform approach to nutrition during therapeutic cooling in neonates within the UK.

Further research and subsequent guideline development is essential to ensure optimal treatment is given to this patient group.

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PO-0582 FEEDING DIFFICULTY IN LATE PRETERM INFANTS

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Background and aims Compared with term infants, late preterm infants have higher risks for morbidities such as respiratory distress, hypothermia, hypoglycemia, hyperbilirubinemia and feeding difficulty. The aim of this study to investigate incidence and clinical characteristics of feeding difficulty in late preterm infants.

Methods A total of 426 infants were enrolled. We evaluated the clinical and demographic characteristics and feeding difficulty of late preterm infants.

Results 54 infants had feeding difficulty. There were no differences in gestational age and birth weight among the groups. Mean intolerance day was 2.3 ± 1.2 days. Compared infants with feeding intolerance and non-feeding intolerance full enteral feeding time 8 ± 2.3 days and 5.2 ± 1.7 days, respectively ($p < 0.001$). Feeding with breast milk rates was similar between the groups. Prokinetic use in the feeding intolerance group was 46% ($n = 25$). Subgroup analysis between prokinetic users and non-

users there were no differences in full enteral feeding time and duration of parenteral nutrition.

Conclusions Late preterm infants should be followed closely for the complications such as feeding difficulty.

PO-0583 IS THERE AN ASSOCIATION BETWEEN FUNCTIONAL GASTROINTESTINAL DISORDERS IN THE FIRST THREE MONTHS OF LIFE AND MATERNAL PSYCHOLOGICAL PROBLEMS?

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Aim of the study To investigate whether functional gastrointestinal disorders (DFGIs), defined according to Rome III criteria, are associated with postpartum mood disorders.

Methods 113 mother/child pairs were enrolled in this perspective, longitudinal study. Maternal depressive symptoms were evaluated at birth, one and three months after delivery using Maternity Blues, Edinburgh Postpartum Depression Score (EPDS) and Symptom Check List for Anxiety and Depression. The Adult Attachment Interview (AAI) was used to determine the attachment style of the mother. Any sign/symptom was recorded weekly for the first three months of life, together with type of feeding. Statistical analysis (SPSS software): χ^2 test, student t-test, linear regression.

Results 37 (32,7%) newborns were exclusively BF. 16 (14,2%) newborns had regurgitation, 10 (9,7%) colics, 4 (3,5%) dischezia and 10 (9,7%) constipation. 60 (53,1%) mothers had postpartum depression and/or anxiety. 53,6% of infants with regurgitations had a depressed mother vs 23% of infants without regurgitations ($\chi^2 = 10,63$, $p = 0.003$); 45,2% of infants with colics had a depressed mother vs 15,9% of infants without colics ($\chi^2 = 10,63$, $p = 0.001$). A mother's insecure attachment style was found in 36% of infants with persistence of regurgitations until third months of life vs 1,8% of infants with mother's secure attachment style ($p < 0.001$).

Conclusion Postpartum maternal depressive symptoms and anxiety are associated with infantile colic and regurgitations. Screening and early intervention in cases of postpartum depression could be useful to avoid inappropriate nutritional and pharmacologic treatments, promoting the health of both mother and infant.

PO-0584 WITHDRAWN

PO-0585 EFFECT OF LONG TIME LOW TEMPERATURE PASTEURISATION (LTLT) AND LYOPHILIZATION ON FATS OF HUMAN MILK BANKING (HMB)

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Abstract PO-0585 Table 1 Raw/LTLT/Lyophilized HM

	Raw (n = 22)	LTLT (n = 22)	Lyophilized (n = 18)
HM			
Total Lipids (g/l)	32,17*	31,31	30,87*
Fatty Acids%			
Myristic	7.05	7.01	7.08
Palmitic	23,38	23,25	23,49
Oleic	30,79	31,24	31,14
Linoleic	9,27	9,26	9,28
linolenic	0,86	0,86	0,87
Arachidonic	0,39	0,39	0,41
DHA	0,24	0,24	0,26
Trans	0.92*	0.91	1*

* p < 0.05

Background Donor human milk (HM) was associated with slower growth in the early postnatal period. The macronutrient concentrations of HM could be influenced by the various processes used in human milk bank. The LTLT pasteurisation was known to slightly decrease protein and fat content of HMB. But The effect of the lyophilization was not described.

Aims To Compare the lipids compositions between raw/LTLT/lyophilized HM.

Methods This is a monocentric of 22 batches independent prospective study on HM. After Folch extraction, Total fat was determined gravimetrically. The fatty acid (FA), after direct transesterification, were separated by capillary gas chromatography with BPX 70 column. Statistical analysis were: appaired t test and/or T of Wilcoxon.

Results

Conclusion Decrease of the fats was mainly observed after pasteurisation: difference (d=0.86 g/l) (p = 0.05, after Bonferroni correction it is non significant); the lyophilization preserved almost total lipids after LTLT (d=0.26 g/l NS). But the total effect of LTLT then lyophilization was a loss of 1.10 g/l of total lipids and significant. There was no significant difference between each of the fatty acids with both processes. LTLT Pasteurisation is not an optimal decontaminating HM process and we have to develop new techniques.

PO-0586 HYPERALIMENTATION AND PLASMA LEVELS OF AMINO ACIDS IN VERY PRETERM INFANTS DEPENDENT ON PARENTERAL NUTRITION

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Background The standardised, concentrated with added macronutrients parenteral (SCAMP) nutrition regimen provides hyperalimentation to very preterm infants (VPI). Current neonatal

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 (6.0–11.5) 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.

PO-0587 NUTRITIONAL MODIFICATION TO DECREASE THE EXTRAUTERINE GROWTH RESTRICTION IN VERY LOW BIRTH WEIGHT INFANTS

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Background and aims Extrauterine 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

Abstract PO-0586 Table 1 Plasma CEAA levels (nmol/L) in SCAMP (S) and control (C) groups

		Tyrosine	Cystine	Glutamine	Arginine	Proline	Glycine
RR		33–75	55–75	325–800	53–71	141–245	178–248
Week 2	S	59 (34–85)	26 (16–33)	495 (387–560)	41 (25–54)	395 (326–462) ^a	388 (339–452)
Median (IQR)	C	53 (38–67)	25 (17–40)	435 (361–535)	34 (21–45)	323 (270–386) ^a	392 (316–466)
Week 3	S	89 (57–107)	36 (30–49)	544 (401–617)	52 (39–69)	369 (306–452) ^b	434 (405–566)
Median (IQR)	C	56 (47–86)	36 (24–41)	494 (413–562)	47 (29–57)	296 (255–366) ^b	447 (339–528)

^{a,b}p < 0.05.