

EOLD. In the presented case scenario intensivists would wait with the EOLD until the morning meeting and continue full treatment in contrast to specialists and residents.

Conclusions No major differences were found among paediatricians on attitudes about EOLD, while in case scenario intensivists were found to be more cautious in EOLD.

Enteral Nutrition

O-041 **INTESTINAL MICROBIOTA DIVERSITY IN PREMATURE NEONATES AFTER SUPPLEMENTATION WITH PROBIOTIC LACTOBACILLUS AND BIFIDOBACTERIUM**

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10.1136/archdischild-2014-307384.109

Purpose Routine probiotic supplementation with Bifiborm® (*Lactobacillus rhamnosus* and *Bifidobacterium lactis*) in infants with gestational age below 30 weeks was introduced in April 2010 at the Department of Neonatology, Rigshospitalet to reduce the risk of NEC. We aimed to investigate the presence of the probiotic agents as well as potential changes in the total microbiota in the stools collected in two cohorts of infants, before and after the introduction of routine probiotics.

Methods The first cohort ("control cohort") was recruited from September 2006 to January 2009; the second cohort ("probiotic cohort") was recruited from May 2010 to October 2011. Stool samples were collected by nurses as part of routine care at postnatal day 0–5 (sample 1), day 10 (sample 2) and day 30 (sample 3). The total number of samples was 446 in the control cohort and 225 in the probiotic cohort. All the stool samples were examined by conventional culture, tested by PCR for the 16S DNA of the two probiotic agents, as well as denaturing gel gradient electrophoresis (DGGE). The band patterns from DGGE were subjected to principal component analysis (PCA).

Results In the probiotic cohort 82% was PCR positive for *L. rhamnosus*, 34% was positive for *B. lactis* in contrast to 6% and 3% in the control cohort. The PCA from the DGGE results did discriminate the two groups with a $p < 1^{-70}$. This was dominantly caused by a strong first component representing mainly the total of number of bands, with no dominant pattern. Culture showed also a higher number of organisms ($pp < 1^{-22}$) with no specific bacteria.

Conclusion *L. rhamnosus* and *B. lactis* are not naturally present in the stool of neonates. Administration of probiotics resulted in the presence of the probiotic organisms in the stools and more importantly a profound increase in diversity of the intestinal microbiota. No specific bacteria were seen to be favoured by the probiotic supplementation.

O-042 **GASTRIC RESIDUALS IN PRETERM INFANTS AS PREDICTOR OF TOLERANCE TO EARLY ENTERAL FEEDS (GRIP TRIAL)**

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10.1136/archdischild-2014-307384.110

Background Evidence is inconsistent to support checking gastric residual volumes (GRv) in predicting feeding intolerance in preterm infants. GRv remains standard practice in guiding feeding advancement in several neonatal centres. We hypothesises that this practice delays establishment of full enteral feeding with associated complications.

Aims The effect on time to reach full feeds (120 ml/k/day) with not checking GRv in advancing feeds in preterm infants.

Methods

Design Single Centre, unmasked, parallel armed RCT

Inclusion criteria Infants recruited within 48hrs of birth with birth weight (BW) ≥ 1500 grams ≤ 2000 grams.

Exclusion criteria Major congenital malformations, asphyxia and BW $\leq 3^{\text{rd}}$ percentile

Randomization Variable number blocks stratified by BW

Study intervention GRv assessed only with bloody aspirates or with vomiting and abnormal abdominal examination.

Control GR volume assessed routinely with feeding advancement

Results 86 infants with BW 1750 ± 140 g and gestational age 32.1 ± 1.5 weeks were enrolled. There was no difference in time to reach full feeds with both groups. Enteral feeds 120 mL/kg/d were achieved at DOL 5.9 ± 1.7 and 5.7 ± 1.8 in study and control group respectively. There was no difference in episodes of feeding interruptions, incidence of sepsis, reaching BW, and 120% of BW between two groups. However, two infants in the control group developed NEC.

Conclusions Not checking GRv while advancing feeds in late preterm infants did not statistically reduce the time to achieve full enteral feeds however there were no adverse events noted with this practice. This study should be done in VLBW babies where GRv is a major hurdle to feeding advancement.

Gastroenterology I

O-043 **HELPING BABIES BREATHE (HBB) TRAINING IN ROMOTE AREAS OF CHINA: EDUCATIONAL IMPACT OF A PILOT TRAINING WORKSHOP**

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10.1136/archdischild-2014-307384.111

Background and aims Helping Babies Breathe (HBB) is an evidence-based educational program which teaches the simple and essential steps that effectively resuscitate the majority of infants not breathing at birth. This study aims to evaluate the training effectiveness of HBB program in remote areas of China.

Methods Based on the HBB educational materials of American Academy of Paediatrics (APP), a two-day intensive training workshop was carried out by sufficient master trainers among 73 healthcare providers from county level hospitals of Tibet and Sichuan province in 2013. The neonatal resuscitation (NR) knowledge of trainees and their self-confidence to complete NR were evaluated and compared before and after training. Bag and mask ventilation skills (BMVS) and objective structured clinical

examination (OSCE) Station A and Station B were assessed after the training.

Results NR knowledge score improved from 12.43 ± 3.50 to 15.86 ± 1.60 after HBB training, with statistically significant difference ($t=7.42$, $p < 0.001$). NR confidence score improved from 2.15 ± 1.01 to 3.38 ± 0.80 , with statistically significant difference ($t=7.72$, $p < 0.001$). 72.2% of 73 trainees mastered the whole 7 items on BMVS after training, and 16.7% mastered 6 items of the skill. 92.3% of trainees passed the OSCE A assessment, 83.9% passed the OSCE B assessment, and 77.4% passed both assessments.

Conclusions Healthcare providers participating the HBB training can significantly improve their NR knowledge and confidence. More simulation trainings are needed for healthcare providers to master the practical bag and mask ventilation skills, and deal with complex clinical cases correctly.

O-044 WITHDRAWN

O-045 INCIDENCE AND OUTCOMES OF SEVERE NECROTISING ENTEROCOLITIS IN INFANTS LESS THAN 32 WEEKS GESTATION: A PROSPECTIVE POPULATION STUDY

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10.1136/archdischild-2014-307384.112

Objectives

Population data for Necrotising Enterocolitis (NEC) are sparse. We determined the incidence, short-term outcomes and antecedent feed exposures of severe NEC in preterm infants in England.

Methods The study comprised infants 23⁺⁰ to 31⁺⁶ weeks gestation born in 2012 and admitted to 129 (80%) neonatal units in England. Infants with severe NEC (defined as requirement for surgery, histology, or post-mortem) were identified from the National Neonatal Research Database (www.imperial.ac.uk/ndau).

Results Of 6468 infants, 167 (2.6%) had severe NEC; incidence (95% confidence interval) for 23 to 25⁺⁶, 26 to 28⁺⁶, 29 to 31⁺⁶ weeks gestation infants was 8% (6.4, 10), 3.5% (2.7, 4.4) and 0.8% (0.6, 1.0) respectively. Relative Risk reduced with each additional gestational week (0.70 (0.66, 0.74); Poisson regression, $p < 0.001$). Of infants requiring surgery, 60% received surgery and survived, 30% received surgery and died, and 10% did not receive surgery; all died. Figure 1 illustrates the inverse relationship between gestation and postnatal age at surgery; median days (interquartile range) 23 to 25⁺⁶: 27 (13–44); 26 to 28⁺⁶: 24 (11–35); 29 to 31⁺⁶: 12 (8–25) (log-rank test, $p = 0.02$). Antecedent feeding exposures were 8% never fed; 41% exclusively maternal milk; 13% maternal and donor milk; 35% human milk and formula; 3% exclusively formula. Fortifier was used in 12%.

Conclusions Severe NEC remains a devastating disease affecting preterm infants in the first postnatal month. Novel findings are that 1 in 10 affected infants die having been considered too unwell for surgery, and over half were exclusively fed human milk prior to onset.

O-046 EFFECTS OF EARLY SODIUM AND FLUID INTAKES ON SODIUM LEVELS AND WEIGHT CHANGE IN EXTREMELY PRETERM INFANTS

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10.1136/archdischild-2014-307384.113

Background Hyponatremia is common in extremely preterm infants but it is unclear to what extent it is affected by sodium (Na) and fluid intakes. It is assumed that infants normally lose 5–10% of birth weight during the first postnatal days.

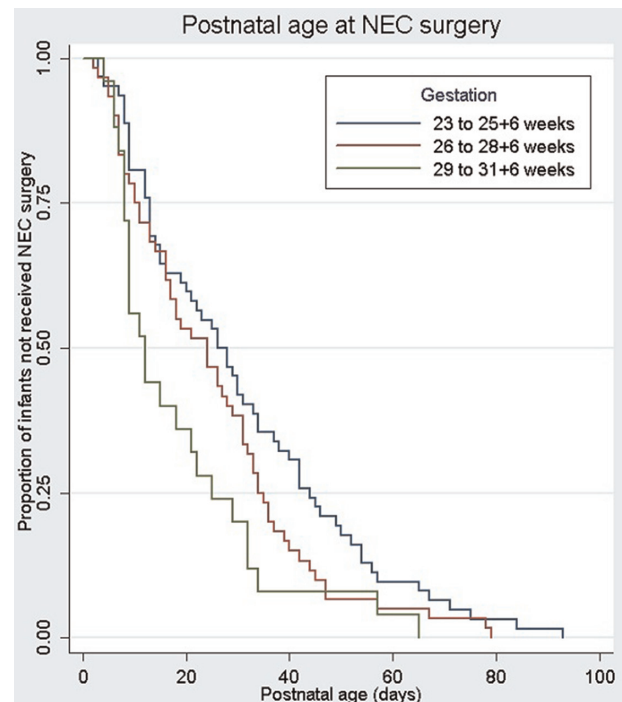
Aim To explore associations between early intakes of Na and fluids and biochemical levels of Na as well as weight change during early postnatal life.

Method We investigated a population-based cohort of Swedish extremely preterm infants (<27 gestational weeks). Detailed data of Na intakes, biochemical levels of Na and anthropometric measurements were retrospectively obtained from hospital records. Data are expressed as mean \pm SD.

Results Preliminary analyses of 547 infants (gestational age 25.3 ± 1.1 , birth weight 762 ± 170 g) showed that highest Na levels occurred at day 3 of life (144.3 ± 6.2 mmol/L) and were associated with Na intake during the first 2 days of life ($R = +0.25$), gestational age ($R = -0.23$) and birth weight ($R = -0.18$) ($p < 0.001$ for all).

Of included infants 32% lost more than 10% of birth weight during the first 3 days. There was a strong correlation between fluid intake within the first two days of life and weight change between birth and day 3 ($R = +0.56$, $p < 0.001$). Among those (27%) who lost between 5–10% in weight, fluid intakes were on average 103 mL/kg/d.

Conclusion Early Na levels were significantly correlated with early Na intake, low gestational age as well as low birth weight. In order to avoid hyponatremia and excessive weight loss, fluid and Na intakes during the first 2 days need to be strictly regulated.



Abstract O-045 Figure 1 Postnatal age at NEC surgery.