

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O-044 WITHDRAWN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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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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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.

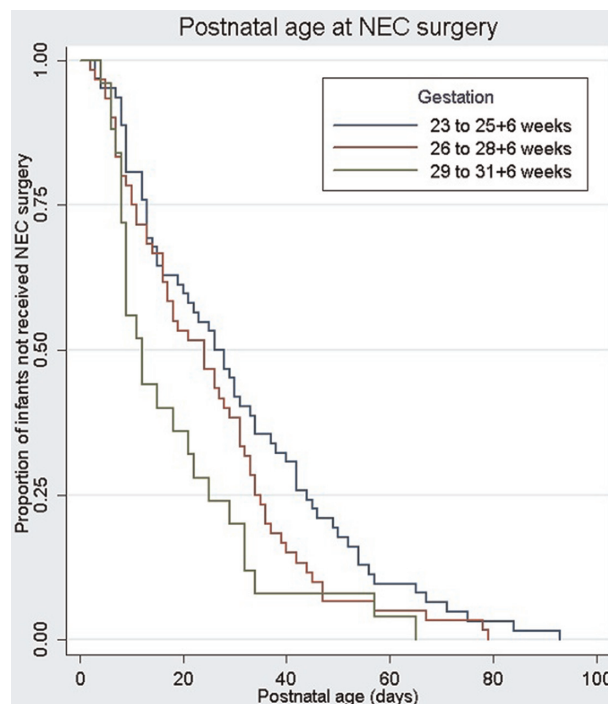
Aim To explore associations between early intakes of Na and fluids and biochemical levels of Na as well as weight change during early postnatal life.

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.