has had a measurable impact on neonatal survival rates.

Method: We retrospectively collected data from District General Hospital (DGH) Z, between 1999-2009, especially looking at admission, survival rate and cause of neonatal death in different birth weight groups: above 2500g(A), 2000-2500g(B), 1500-2000g(C), 1000-1500g(D) and less than 1000g(E).

Results: In group A there has been no change in survival. There have been an increase in the number of admissions and survival of very low birthweight (VLBW) infants in groups D and E. Respiratory problems are one of the main causes of death in DGH Z.

Conclusion: We have demonstrated a changing pattern of admission to the neonatal unit with better survival following the introduction of treatments such as CPAP with established links between institutions. The introduction of standardised protocols and staff training has made a difference. Further improvements in survival could be achieved by introducing formalised Neonatal Life Support resuscitation courses for all staff, medical and nursing, involved in neonatal care.

941

AIR VERSUS OXYGEN IN NEONATAL RESUSCITATION - A REGIONAL AUDIT AND GUIDELINE

M. Bastawrous¹, A. Cox², N. Subhedar², S. Brearey¹, Countess of Chester and Liverpool Women's Hospital

¹Countess of Chester, Chester, ²Liverpool Women's Hospital, Liverpool, UK

Introduction: Recent meta-analyses of randomised controlled trials have demonstrated that air may be effective as and arguably safer than oxygen during neonatal resuscitation (NR). Measured outcomes include reduced neonatal mortality and oxidative stress with reduced chronic lung disease. National and International Guidelines now recommend initiating NR in air. Available guidance is limited regarding FiO₂ increments and variations in gestation. A local audit was taken to determine the resuscitation practice using air or 100% oxygen during initial NR in the Cheshire and Merseyside Neonatal Network (CMNN). We also present a resuscitation-in-air guideline recently implemented at Liverpool Women's Hospital (LWH).

Method: Lead Clinicians from all eight hospitals within CMNN were sent electronic questionnaires on NR guidelines and practice.

Results: All Clinicians responded by e-mail. Two centres initiate resuscitation in air for term and pre-term infants. Six centres reported policies to initiate resuscitation in 100% oxygen. Six centres had gas blenders to facilitate administering lower concentration of FiO₂. Practice for assessment of oxygen requirements varied, including visible estimation of cyanosis, changes in HR and saturation monitoring. Two centres had changed NR guidelines in past five years. Following the audit, LWH introduced a resuscitation guideline, including pulse oximetry and inspired oxygen titration guidance.

Discussion: Initial NR practices varied within the CMNN and may reflect similar variation in the UK. Six out of eight centres did not initiate resuscitation of term infants using air as recommended by NICE. The guideline for resuscitation in air is suggested to enable a consistent nationwide approach to NR.

942

DOES INTRAPARTUM OXYTOCIN DURING LABOUR AFFECT FETAL HORMONE STATUS?

M.Á. Marín Gabriel¹, I. Olza Fernández², **A.M. Malalana Martínez**¹, M.A. Noguera Moreno³, B. Martínez Rodríguez¹, P. Pérez Riveiro¹, A. Fernández-Cañadas Morillo⁴, M. Durán Duque⁴, F. López Sánchez⁵

¹Pediatrics, ²Psychiatrics, ³Biochemistry, ⁴Obstetrics, ⁵Obstetrics and Gynecology, Hospital Universitario Puerta de Hierro-Majadahonda, Madrid, Spain

Background: Oxytocin is a common drug used during labour. The placenta is not an effective barrier to the passage of drugs, and the blood/brain barrier is under-developed in the fetus. Therefore, the assumption that oxytocin does not cross the placenta and the fetal blood/brain barrier have been questioned. Cortisol (a stress hormone) in umbilical cord may vary between various methods of delivery and analgesia.

Aims: The objective of the study is to evaluate the effect of intrapartum exogenous oxytocin used during induced labour on fetal stress hormone status.

Methods: Observational descriptive study approved by Local Ethical Committee. 27 women with term pregnancies were studied. All had singleton, healthy pregnancies and epidural analgesia was used. Newborns were vaginal delivered. Arterial cord blood samples were obtained immediately following the delivery. Newborns were excluded if 5min Apgar was < 9, if caesarean section was made after inclusion in the study (n=3), or newborn was admitted in NICU (n=2). Patients were asked to sign a letter of consent.

Results: Mean GA and birthweight was 39.5 ± 1.3 w and 3326.1 ± 323.6 g respectively. Mean oxytocin dose was 2326.9 ± 1771.9 mUI. Mean cortisol in umbilical cord was 20 ± 5.1 mcg/dl. In the whole group, no correlation was found between the amount of oxytocin infused during labour and cortisol in umbilical cord ($r=0.35$; $p=0.11$), but correlation was found in the eutocic group ($r=0.7$; $p=0.005$.)

Conclusions: Total dose of oxytocin infused during labour may affected fetal hormone status arising cortisol levels.

943

AN ANALYSIS OF DIFFERENT TREATMENT STRATEGIES FOR CATHETER-RELATED SEPSIS IN NEONATES WITH PERCUTANEOUSLY INSERTED CENTRAL VENOUS CATHETER: REMOVAL OR NOT?

M.H. Tsai¹, Y.-C. Huang², R. Lien²

¹Department of Pediatrics, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Yunlin,

²Department of Pediatrics, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Taoyuan, Taiwan R.O.C.

Objectives: To determine if removal of percutaneously inserted central venous catheter (PICC) is compulsory in neonates with catheter-related sepsis (CRS) and the risk factors of infectious complications if the PICC is retained.

Method: A cohort study of neonates who had PICCs and developed CRS between 2001 and 2007 was conducted in our neonatal intensive care unit. CRS was defined as a positive blood-culture confirmed clinical sepsis.

Results: 99 cases had early removal of PICC (ER-PICC) within 3 days and 135 cases had retained

PICC (LR-PICC) for more than 3 days after onset of clinical sepsis. Resolution of clinical sepsis within 2 days was more frequent in the ER-PICC than LR-PICC group (80.8% vs. 57.8%, $P < 0.001$). Although there was no significant difference between these two groups in terms of infectious complications and cases fatalities, the LR-PICC group had significantly higher incidence of recurrence within one month after CRS ($P=0.002$). Inappropriate initial antibiotic treatment was the only variable independently associated with infectious complications (OR [95% CI]=11.4 [3.34~39.2], $P=0.001$)

Conclusions: PICCs should be removed in CRS because retention of PICCs for more than three days will delay resolution of clinical sepsis and lead to higher incidence of recurrence within one month.

944

ASSOCIATED RISK FACTORS FOR CHOLESTASIS IN SURGICAL NEONATES

I. Girard¹, V. Champion¹, J. Lozar², R. Carbajal³, E. Walter¹, S. Dahan¹, D. Mitanchez¹

¹Neonatology, Hôpital Armand Trousseau-Université Paris VI, Paris, France, ²University Children's Hospital, Ljubljana, Slovenia, ³Pediatric Emergency, Hôpital Armand Trousseau-Université Paris VI, Paris, France

Background: Prolonged parenteral nutrition (PN) is known as a contributory factor for cholestasis in surgical neonates, but additional risk factors should also be associated.

Objective: To describe the incidence and the characteristics of cholestasis in neonates requiring surgery and to analyse associated risk factors.

Methods: Monocentric prospective observational study between April 2008 and April 2009 including all neonates admitted for surgical thoracic or abdomino-pelvic pathologies. Biological hepatic screening was performed weekly during PN and when cholestasis persisted. Cholestasis was defined as: conjugated hyperbilirubinemia $>17 \mu\text{mol/L}$ or $>20\%$ of the total bilirubin $>85 \mu\text{mol/L}$.

Results: During the study period 469 newborn were admitted in the unit and 56 neonates required thoracic or abdomino-pelvic surgery at median age of 1 day [range: 0-55]. 19/56 (33.9%) developed cholestasis (median age: 11 days [range: 2-56]), 13/19 persisted over 14 days. Main surgical