controls. Abnormal NE grade is best predicted by day 2 serum Epo and IL-8 while CSF levels were not predictive of outcome. Serum biomarkers may have a role in long term outcome prediction following NE.

PS-158 EMERGENCY TRIAGE ASSESSMENT AND TREATMENT (ETAT) TRAINING IN A SEMIRURAL HOSPITAL IN SIERRA LEONE – RETENTION OF KNOWLEDGE AND FEED BACK

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Background and aims ETAT is a well established training course initiated through WHO in 2005. It is aimed at resource poor countries and teaches triage of children leading to effective emergency treatment. The course is run over 3 days consisting of tutorials and practical skill stations. We delivered ETAT for the first time in a semirural hospital situated in Lunsar, Sierra Leone.

Methods 20 candidates participated in the course. Candidates were asked to complete a test consisting of 25 points and to give structured feed back after completion of all modules.

Results 20 initial post course assessments were performed with an average score of 78.2%. overall feedback was very good with all categories rated as excellent or good. Overriding themes were:

"The training should be repeated on a regular basis"

"Tutorials and practical skill stations will help me to implement this knowledge into practice".

Conclusions ETAT training is well received with all feedback categories rated as either excellent or good. The initial testing demonstrated good knowledge of topics taught with an overall score of 78.2%. Post course retention of knowledge however is likely to be poor in line with previously published data. To achieve long term retention of knowledge ETAT training should be delivered repeatedly, ideally led by the local team.

PS-159 BETA-AMYLOID AND S100B COULD BE VALUABLE BIOMARKERS AFTER NEONATAL HYPOXIA-REOXYGENATION. A STUDY IN NEWBORN PIGS

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Background and aims The use of biomarkers is an important strategy for risk stratification for neonates admitted to the NICU after perinatal asphyxia. Total Tau (t-Tau), phosphorylatedTau (p-Tau) and Beta-Amyloid (1-42) (b-A) in CSF, are useful biomarkers in various neurological disorders, such as Alzheimer's. Few, if any, experiments have investigated the possible association between oxidative stress in the neonates and the levels of these proteins.

Abstract PS-159 Table 1

CSF	Severe Hypox	P-Value	Mod.Hypox	P-Value	Control
S100B ng/ml	40 (36)	<0.01	39 (39)	<0.05	12 (9)
β-A pg/ml	1002 (401)	0.01	1076 (206)	<0.05	1290 (143)
p-Tau pg/ml	85 (49)	n.s.	95 (64)	n.s.	68 (15)

Abstract PS-159 Table 2

Objective To study any correlations between the levels of t-Tau, p-Tau, b-A, S100B and NSE and oxidative stress in the newborn pig.

Methods Fifty-four newborn piglets, age 12–36 h, were included. One control group (n = 6) and 2 experimental groups (n = 24), exposed to global hypoxia (8% O₂) until BE reached -15 mmol/l (moderate hypoxia) or -20 mmol/l (severe hypoxia) or BP fell below 20 mmHg. The pigs were observed for 9.5 h. CSF was collected 9.5 h after the intervention.

Results

Discussion To our knowledge this is the first study investigating the levels of Tau, p-Tau and b-Amyloid in a neonatal animal model after hypoxia-reoxygenation. The reduced level of CSF b-Amyloid may reflect the death of neurons after neonatal hypoxia. A strategy of measuring several biomarkers should be applied when assessing the prognosis after perinatal asphyxia.

Conclusion These findings show that b-amyloid and S100b are significantly changed in neonatal pigs subjected to hypoxia compared to controls, thus they may be valuable biomarkers after perinatal asphyxia.

Long Term Follow Up

PS-160 VOLUME OF CEREBELLUM AND THALAMUS IS ASSOCIATED WITH WORKING MEMORY PERFORMANCE IN CHILDREN AND ADOLESCENTS BORN VERY PRETERM

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Background Children and adolescents born very preterm (VPT) are at increased risk for altered brain development [1] and impaired cognitive performance [2]. Decreased regional brain volume in VPT infants has been associated with later working memory deficits [3]. This study aims to identify associations between regional brain volume and working memory performance in VPT children.

Design/methods Thirty-three VPT children between 10 and 16 and 34 term-born peers were examined. Three-dimensional T1- and T2-weighted MR images were acquired on a 3T GE scanner. Regional brain volumes were calculated using FreeSurfer 5.3.0. Working memory was assessed using the spatial working memory (SWM) task of the Cantab test battery.

Results Neither regional brain volume nor spatial working memory performance differed significantly between VPT and TB children ($p > 0.05$). There was, however, a significant associations between regional brain volumes and performance in VPT children: After controlling for ICV, the number of errors in the SWM task correlated negatively with the volume of the cerebellar white matter on the right ($r = -0.359$, $p = 0.043$), the cerebellar white matter on the left (trend level; $r = -0.315$, $p = 0.079$), the thalamus on the right (trend level; $r = -0.331$, $p = 0.065$) and the thalamus on the left side ($r = -0.437$, $p = 0.012$). In term born peers, no correlation was found.

Conclusion Working memory performance is specifically linked to thalamic and cerebellar volumes in VPT but not in term-born children. This implies a specific anatomical correlate of working memory in adolescents at risk for altered brain development.

REFERENCES

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- 2 Mulder *et al.*, 2009, for a review
- 3 Beauchamp *et al.*, 2008

PS-161 SEVERE INTRAVENTRICULAR HAEMORRHAGE AND PERIVENTRICULAR LEUKOMALACIA RATES IN VERY LOW GESTATIONAL AGE INFANTS ADMITTED TO EURONEONET PARTICIPANT UNITS

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Background/Aim To describe rates and time trends of severe (Grade III/IV) intraventricular haemorrhage (IVH) and cystic

periventricular leukomalacia (PVL) and to investigate associated perinatal factors in EuroNeoNet Neonatal Intensive Care Units.

Methods Data from 36,607 VLBWI admitted to 194 NICUs from 19 countries (2006–2012). IVH and PVL rates were separately analysed using logistic regression models for clustered data, with a derivation sample to look for associated factors and a validation sample to verify these (70%/30%). Calibration (Hosmer-Lemeshow test) and discrimination (AUC analysis) were assessed. Significance level was 0.05.

Results There was a marked, significant difference in severe IVH and PVL rates between Northern, Western and Eastern European regions (IVH rates 5%, 9.3% and 14.5% respectively; PVL: 2%, 3.7% 8.8%). Severe IVH and/or PVL had common risk factors: lower GA, 5' Apgar score, antenatal steroid use, male gender and need for surfactant. PVL was associated with major birth defects, and IVH with vaginal delivery, multiple birth, lower 1' Apgar score and need for DR resuscitation manoeuvres. A significant time trend to decreasing IVH rates was found in Western countries (from 10.5% in 2006 to 7.3% in 2012) (H-L; ROC (95% CI): Severe IVH: 0.870; 0.805 (0.797 to 0.813); PVL: 0.198; 0.664 (0.649 to 0.679)).

Conclusions There is wide variability in IVH and PVL rates across European regions. IVH rates may be decreasing in Western countries. Although both scores could be used to assess quality improvement initiatives, the perinatal model has better predictive value for IVH.

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PS-162 AMBULATORY BLOOD PRESSURE IN ADULTS BORN PRETERM

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Abstract PS-162 Figure 1 Mean difference and 95% confidence intervals (error balls) in mean (mmHg) and SD (mmHg) of ambulatory blood pressure measurement between adults early and late preterm compared to controls (zero line) adjusted for age, sex and use height and BMI, smoking during pregnancy and hypertensive pregnancy disorder, parental education, subject's height and BMI, physical activity and smoking.