

cognitive developmental outcome than indomethacin, but this may be an effect of using both the Bayley-II as the Bayley-III.

# 1266 INTRAUTERINE GROWTH RESTRICTION AND VERY PRETERM BIRTH ARE ASSOCIATED WITH MOTOR DYSFUNCTION AND WHITE MATTER PATHOLOGY AT SCHOOL AGE

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**Objective** To assess neuromotor ability and white matter (WM) pathology at early school age in children delivered at very early gestation due to intrauterine growth restriction (IUGR) with abnormal fetal blood flow.

**Design** Morphological 3T MRI and Movement assessment battery for children (ABC) were performed at median 8.5 years of age (range 7–11) in 27 children with IUGR and abnormal fetal blood flow born at a median of 26.9 (range 24–29) gestational weeks (PT-IUGR) to assess WM morphology and motor skills. Control groups were matched for gender and age and had birthweight appropriate for gestational age (AGA); 26 preterm (PT-AGA), born at 26.9 (range 24–29) gestational weeks and 28 term children (T-AGA).

**Results** Children with cerebral palsy in the PT-IUGR (n=3) and PT-AGA group (n=4) were excluded from further analysis. The PT-IUGR group had significantly higher rate of WM pathology compared to the T-AGA group (p<0.001) whereas PT-AGA did not differ from the other groups. WM pathology was found in 39%, 14% and 0% in the PT-IUGR, PT-AGA and T-AGA groups respectively.

Higher scores on ABC, reflecting impaired motor skills, were found in the PT-IUGR mean (SD) 9.7 (5.5) compared to the PT-AGA 5.3 (4.1) and T-AGA 3.9 (3.7) children (p=0.004 and <0.001, respectively). WM pathology found on MRI was not related to ABC-movement scores.

**Conclusion** IUGR with abnormal fetal blood flow in infants born very preterm has an additional negative impact on motor outcome and WM morphology at early school age.

# 1267 ANTENATAL CORTICOSTEROIDS AND PULMONARY HYPERTENSION TREATED WITH INHALED NITRIC OXIDE ARE ASSOCIATED WITH NEURODEVELOPMENTAL OUTCOMES OF ELBW INFANTS

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**Background and Aims** To describe neurodevelopmental outcomes of ELBW infants in our NICU and to identify characteristics associated with severe disability.

**Methods** A retrospective cohort study was conducted to collect perinatal factors and neurodevelopmental outcomes at 3 years old among extremely low birth weight (ELBW) infants admitted to the level III NICU at Osaka Medical Center and Research Institute for Maternal and Child Health in Japan from January 1, 2003 to December 31, 2007. Logistic regression was used to identify characteristics associated with cerebral palsy (CP) and mental retardation (MR: corrected developmental quotient < 70).

**Results** 201 ELBW infants without major congenital anomalies were admitted and 28 (13.9%) of them were discharged by death. Of the remaining 173 survivors, 153 (88.4%) were evaluated. CP and MR occurred in 37 (24.2%) of the assessed infants. Multivariate logistic regression suggested antenatal corticosteroids (45.9% vs

71.6%; adjusted odds ratio, 0.29 [95% CI, 0.14–0.68]) and pulmonary hypertension (PH) treated with inhaled nitric oxide (iNO) (8.1% vs 0.9%; adjusted odds ratio, 13.19 [95% CI, 1.23–138.34]) were the characteristics most highly associated with CP and MR. Of 3 infants, who had suffered from PH treated with iNO at birth and subsequently had CP and MR, 2 infants were delivered after premature rupture of the membranes and 1 was delivered at home accidentally.

**Conclusions** Antenatal corticosteroids and PH treated with iNO are associated with severe disability of ELBW infants. Further prospective studies involving large samples are required to confirm these results.

# 1268 USE OF HEALTH CARE RESOURCES BY SURVIVING VERY LOW BIRTH WEIGHT (VLBW) INFANTS AFTER DISCHARGE TO HOME

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**Background and Aims** VLBW infants require intensive care in the neonatal period and to discharge. The aim of this investigation was to study the extent to which surviving children with birth weight (BW) < 1500 g was in need of medical specialist healthcare services as well as drug treatment after discharge to home.

**Methods** The study was conducted as a retrospective cohort study where four cohorts (1997, 1998, 2004, and 2007) of VLBW infants were followed. Data on perinatal factors that could contribute to increased risk for future health care needs, hospital admissions and outpatient visits as well as drug prescriptions after discharge were obtained from patient records. The study included 152 infants.

**Results** The study shows that VLBW infants have a significant need for later health care resources, particularly the first 4–7 years after discharge. During the first 4 years 70% of infants had been hospitalized with 3.6±6.0 admissions. They spent 25±29 days in hospital the first year decreasing to 6.5±9 days the fourth year. A significant higher admission rate was found for male infants, infants with BW < 1.000 grams, infants with bronchopulmonary dysplasia (BPD), and infants treated for patent ductus arteriosus (PDA). Drugs were prescribed to 52.5% of infants with 1.5±1.8 drugs/year. Infants with BPD and PDA and BW < 1000 grams had significantly more drug prescriptions.

**Conclusions** Surviving VLBW infants have an increased need for health care resources several years after discharge. Emergency admissions and high admission rates in some infants might reflect suboptimal follow-up.

# 1269 LEVENE INDEX AT DIFFERENT GESTATIONAL AGES IN INFANTS < 32 WEEKS

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**Background** Levene index is used for the diagnosis of ventricular enlargement, including intraventricular haemorrhage and post haemorrhagic ventricular dilation. The original data dates from the 1980s and more recent studies are based on relatively small numbers of infants.

**Aim** To describe normal values for Levene Index at different gestations.

**Method** The serial cranial ultrasounds were reviewed of all pre-term infants with gestation under 32 weeks admitted to Rotunda

Hospital from January 2009 to December 2011. Ultrasounds with Grade III or IV IVH or PVL were excluded. The data collected was grouped according to gestational age at the time of scan from 24 weeks to 32 weeks.

**Results** 634 cranial ultrasounds from 255 infants were reviewed. The median values show a general trend of increase as gestation increases.

**Abstract 1269 Table 1** Levene Index versus Gestation

Gestation (643 scans) Weeks	Left Median(range)mm	Right Median(range)mm
24 (n=21)	7.91 (7.62–8.21)	8.02 (7.93–8.12)
25 (n=42)	8.11 (4.4–11.29)	8.17 (5.66–9.87)
26 (n=71)	8.26 (5.52–11.01)	8.02 (5.05–10.26)
27 (n=74)	8.18 (5.41–11.43)	7.73 (3.95–12.29)
28 (n=99)	8.32 (5.02–29.39)	8.24 (4.49–29.39)
29 (n=100)	8.89 (5.77–12.67)	8.39 (5.22–11.73)
30 (n=89)	9.35 (6.51–13.17)	8.61 (4.75–12.46)
31 (n=91)	8.82 (6.09–13.42)	8.2 (4.86–13.81)
32 (n=47)	9.61 (6.02–11.8)	8.62 (4.86–13.81)

**Conclusion** This study shows that there is a slight increase in Levene index as gestation at the time of scan increases.

## 1270 PREDICTIVE VALUE OF AMPLITUDE INTEGRATED EEG (AEEG) IN NEONATAL SEIZURES AND NEURODEVELOPMENTAL OUTCOME

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**Background and Aim** Seizures in the neonatal period represent a neurological emergency but it is often challenging for the clinician to recognize it with only visual inspection. Our aim is to evaluate the use of amplitude integrated EEG (aEEG) as a prognostic tool in neonatal intensive care unit (NICU) patients with clinical seizures in the two years follow-up.

**Method** Twenty-four infants with clinical seizures (Group I) and 67 infants with suspected seizure activity (Group II) were included in the study. All infants were monitored with aEEG at least 24 hours after the seizure activity were stopped. aEEG was analysed for background activity, sleep-wake cycle and seizure activity. All infants were followed up in our outpatient clinic had neurologic examination and Bayley II Infant Development Scale were done by the same neuropsychologist on the 6th, 12th, 15th and 18th months of age.

**Results** Median gestational age of the infants were 36.0 weeks (26<sup>1/7</sup>–41<sup>3/7</sup>). There was no significant difference between groups regarding to Bayley scores. Mechanical ventilation, sepsis, inotrope use were more in Group I in which there were more critically ill infant. These critically ill infants tend to have lower Bayley scores in Group I. In Group I infants with normal background activity tend to have higher Bayley scores than those of whom had discontinuous, low voltage, burst suppression activity.

**Conclusion** aEEG helps management of infants with seizure activity allowing continuous long-term monitoring of brain functions. Continuous background activity seems to be a good predictor of aEEG in infants with neonatal seizure.

## 1271 RISK FACTORS FOR INTRAVENTRICULAR HEMORRHAGE IN LESS THAN 32 WEEKS GESTATION PRETERM INFANTS - PROSPECTIVE STUDY

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Intraventricular haemorrhage (IVH) is one of the most important of morbidity and mortality causes in preterm infants.

**Aim** To evaluate the incidence and risk factors for IVH in  $\leq 32$  weeks gestation preterm infants.

**Methods** The study was developed in the Neonatology Dpt. of the Clinical County Emergency Hospital Sibiu between 01.01.2010–31.12.2011. The study group comprised 139 preterm infants with a mean GA of 30.26 $\pm$ 1.93 weeks (24–32 weeks) and a mean BW of 1412.99 $\pm$ 367.389g (600–2270g). The prospectively collected data were analysed using IBM SPSS 19.0 and were considered significant at a  $p < 0.05$ .

**Results** The incidence of IVH in the study group was 50.35% whilst grade 3 and 4 were encountered with an incidence of 5.03%. The preterm infants with IVH had significantly lower BW ( $p < 0.000$ ), GA ( $p < 0.000$ ), and Apgar score at 1 minute ( $p < 0.023$ ). The duration of oxygen therapy, the need for surfactant administration, oxygen duration on CPAP, mechanical ventilation length and the length of hospitalization were significantly greater for the infants with IVH compared with those with normal ultrasound scans. Apnoea of prematurity, PDA and ROP were significantly associated with the presence of IVH (0.001–0.030). Being outborn was also an important risk factor for IVH.

**Conclusion** The analysed data showed similar results - for the incidence and risk factors for IVH - as previously published data in the literature, revealing that between the analysed factors - the severity of the respiratory distress syndrome is one of the major risk factors for IVH in preterm infants.

## 1272 SURVIVAL AND NEURODEVELOPMENTAL OUTCOME OF PRETERM INFANTS WITH A GESTATIONAL AGE OF 22 TO 26 WEEKS IN A REGIONAL CENTRE

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**Background and Aims** Counselling parents of extremely preterm infants requires knowledge on results of large population-based cohorts and contemporaneous local data.

**Methods** We assessed the outcome of all live-born infants 2006 to 2009 with a gestational of 22 to 26 weeks (outborns admitted to neonatal care and all inborns). At a corrected age of 24 months infants underwent Bayley Scales of Infant and Development II testing, clinical and neurological examinations.

**Results** There were 105 infants < 27 weeks born alive, with a median birth weight of 675 g (range 300–1300 g), of whom 23 (22%) died before discharge; ( $\leq 22$  weeks 9/10; 23 weeks 9/18; 24 weeks: 3/22; 25 weeks 1/22; 26 weeks: 1/33). Two infants died after discharge. Complete follow-up data are available in 74 (93%) of the 80 survivors. The median MDI score was 94; >84 in 44 (59%), 84–70 in 20 (27%), and < 70 in 10 (14%) infants. The median PDI score was 98; >84 in 53 (72%), 84–70 in 12 (16%), and < 70 in 9 (12%) infants. None of the children were blind or deaf, 14 had glasses, 5 required hearing aids. Overall, neurodevelopment was classified as normal in 45 of 74 (61%) infants (22 weeks: 0/1; 23 weeks: 1/7; 24 weeks: 10/17; 25 weeks: 12/19; 26 weeks: 22/30).

**Conclusions** The rates of overall survival (76%) and normal neurological development among survivors (61%) were similar to contemporaneous data from for Sweden (70%) and the Stockholm area (65%), respectively.

## 1273 GESTATIONAL HYPERTENSION AND NEONATAL OUTCOME - MOROCCAN DATA

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