

**Conclusion** Postnatally acquired CMV infection among preterm infants is not related with SNHL during the first and second year of life.

## 1259 GESTATIONAL AGE AND PREGNANCY DISORDERS AS RISK FACTORS FOR CEREBRAL PALSY

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**Background** Both pregnancy disorders and low gestational age (GA) are associated with an elevated risk of cerebral palsy (CP). As many pregnancy disorders are associated with preterm birth, it is unclear whether the increased risk of CP in preterm children can be attributed to the pregnancy disorder or the low GA.

**Aim** To disentangle the risk of CP according to GA and pregnancy disorders in children born preterm.

**Method** Norwegian, national cohort study with linkage of the Medical Birth Registry of Norway to the Statistics Norway and the National Insurance Scheme. All births from 1967 to 2001 were followed through 2005, and 1,499,705 individuals were included in the cohort.

**Results** Placental abruption, chorioamnionitis, placenta previa, multiple birth, prolonged rupture of membranes, cervical conisation, unspecified bleeding and pre-eclampsia were associated with an increased risk of CP. The risk of CP increased with decreasing GA (23–27 wks RR 83.3 [95% CI, 69.8–99.4], 28–30 wks RR 49.5 [95% CI, 43.2–56.6], 31–33 wks RR 17.4 [95% CI, 15.3–19.7], 34–36 wks RR 3.3 [95% CI, 2.9–3.8]). The association between GA and CP was not substantially weakened after adjustment for pregnancy disorders.

**Conclusion** Although several pregnancy disorders were associated with an increased risk of CP, low GA appeared to be a more important risk factor for CP in preterm children.

## 1260 NEUROSENSORY OUTCOMES AND HEALTH CARE NEEDS IN SCHOOL-AGE CHILDREN BORN AT < 26 WEEKS' GESTATION AFTER ACTIVE PERINATAL CARE

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**Background and Aims** To examine neurosensory outcomes and special health care needs in 10 to 16-year-old extremely preterm (EPT) children born at 2 tertiary care centers in Sweden adhering to a policy of universal resuscitation of all infants born alive.

**Design and methods** The outcomes of 122 surviving EPT children were compared to a matched control of children born at term. Neurosensory impairments (NSI) were assessed by review of pediatric case records, intelligence by WISC-III, and functional limitations and special health care needs by validated parental interviews (QUICCC).

**Results** Of 213 consecutive EPT live births, 140 (66%) survived to discharge home and 6 infants died in the first year of life. Of survivors, 122 children (91%) were recruited for the study. Table 1 shows rates of disabilities. EPT children had significantly higher rates of functional limitations and special health care needs than controls but the vast majority was free from severe disability that curtail them from activities of daily life.

## Abstract 1260 Table 1 Rates of Disability

Disability	EPT (N = 121)	Control (N = 100)
None	45.4% (55)	90%**
Mild	28.9% (35)	7%**
Moderate	19.8% (24)	3%**
Severe	6.6 % (8)	0%*

Severe Disability: Severe CP (inability to walk), Blindness (visual acuity < 20/200 in better eye), or IQ < -3 SD; Moderate disability, moderate CP (considerable difficulty in walking with or without appliances), deafness requiring bilateral aids or worse or IQ -3SD to < -2SD; Mild disability; mild CP (walking with minimal limitation), or an IQ -2SD to < -1SD; \*P<0.05; \*\*P<0.005

**Conclusions** Disability rates and special health care needs remain high in EPT children, but have not increased since 1990s despite the marked increase in their survival.

## 1261 NEURODEVELOPMENTAL OUTCOME IN EXTREMELY PREMATURE INFANTS BORN IN SWITZERLAND BETWEEN 2000–2008, PRELIMINARY DATA OF THE SWISS NEONATAL NETWORK

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**Introduction** So far, national outcome data on extremely premature infants in Switzerland were not available, and discussions on the care of these patients were based on earlier studies from other countries. This national study assessed neurodevelopment in Swiss infants born between 2000 and 2008 at 24 0/7 to 27 6/7 weeks gestational age.

**Methods** Neurodevelopment was assessed at 2 years using the BSID II. Moderate neurodevelopmental disability (ND) was defined as a mental (MDI) or psychomotor (PDI) development index of 55–70, or mild cerebral palsy (GMFCS level 2). Severe ND was defined as a MDI or PDI < 55, cerebral palsy (GMFCS level ≥3), deafness or blindness. Multivariate logistic regression was performed.

**Results** Among the 1147 extremely preterms born during the study period 303 (26%) died. Follow-up information was available in 684 (81%) survivors. 440 (64%) showed normal development, 166 (24%) moderate ND, and 78 (12%) severe ND. Severe ND was significantly (p<0.05) associated with earlier year of birth, major intracerebral lesions, bronchopulmonary dysplasia, grade 3 retinopathy of prematurity, and lower socioeconomic status. In contrast, birth weight, gestational age and sex showed only trendwise associations with severe ND.

**Conclusion** Based on these preliminary analyses, we now are ready to establish representative Swiss national data on the outcome of extremely premature infants. These will offer guidance to obstetricians, neonatologists, neurologists and parents based on Swiss data.

## 1262 PREVALENCE OF HEARING IMPAIRMENTS AT AGE FOUR YEARS IN EXTREMELY PRETERM INFANTS

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**Background and Aim** Extremely preterm infants are at increased risk of permanent hearing loss. However, population-based data in infants born with less than 27 weeks gestation are scarce. The aim of this study is to investigate the prevalence of hearing impairments in extremely preterm infants at the age four years.

**Methods** A population based cohort study on infants born before 27 gestational weeks from 1 January 2004 to 31 mars 2007 in Stockholm, Sweden. Perinatal clinical data on all children were collected prospectively. Data on hearing ability were retracted from patient records. Hearing ability was investigated through neonatal hearing screening with otoacoustic emissions (OAE) for children born after 1 November 2005 and for all children at age four years with play audiometry through Child Health Centers.

**Results** Of the 107 children, one infant (0.9%) had a permanent moderate (40–60 dB) bilateral sensorineural hearing impairment. The hearing loss was detected through the neonatal hearing screening and hearing aids were given at age three years. 56 children had neonatal hearing screening of which 46 (82%) had normal hearing. After hearing screening at four years age no additional children were identified with hearing impairment. Several children had neonatal morbidity such as BPD, ROP and IVH. At age 30 months 6 children had CP.

**Conclusion** The prevalence of hearing impairments at the age of four in the studied population is 0.9 %. This prevalence is lower than data published in previous extremely preterm cohorts, and lower than expected in this very high-risk population.

#### 1263 THE EFFECT OF SEX ON OUTCOME OF PRETERM INFANTS - A POPULATION-BASED SURVEY

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**Background and Aim** Forty years ago the so-called “male disadvantage hypothesis” as an explanation for increased perinatal morbidity in boys as compared to girls was introduced by Naeye et al. Since then numerous studies have confirmed the risk of being born a boy, especially when born preterm. The aim of the current study was to show comprehensive data on potential sex differences in maternal and neonatal characteristics, short-term morbidity and neurodevelopmental outcome within an entire geographically-determined collective of infants born at a gestational age <32 weeks. Methods: Between 2003 and 2008 we prospectively enrolled all infants born in Tyrol at < 32 weeks of gestation; the association between sex and a wide set of pre- and postnatal factors, post-discharge morbidity and neurodevelopmental outcome was analysed.

**Results** Girls less frequently suffered from early-onset sepsis than did boys (p0.030). After adjustment for multiple corrections (Bonferroni p0.003) no sex differences were seen within any maternal or neonatal parameter. Analysis of morbidity revealed a higher readmission rate in boys (p<0.0001) which was primarily caused by a greater incidence of respiratory problems (p0.003). Boys did not show a greater adverse neurodevelopmental outcome at the age of 12 or 24 months.

**Conclusion** Parents of boys should be prepared for a potentially higher frequency of readmission after initial discharge, but our data currently give no reason for parents of sons to be disproportionately anxious about their neurodevelopmental outcome. Whether boys also enjoy a rosy prognosis for developmental outcome at school age remains to be elucidated.

#### 1264 MOTHER-CHILD INTERACTION IS ASSOCIATED WITH DEVELOPMENTAL OUTCOME IN EXTREMELY LOW GESTATIONAL AGE CHILDREN

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**Background** Early mother-child interaction is one of the factors suggested to have impact on developmental outcome of extremely low gestational age (ELGA) children.

**Objective** To evaluate associations of mother-child interaction with developmental outcome in ELGA children.

**Patients and Methods** A prospective study of 48 ELGA children, born before 28 gestational weeks (26.3±1.2 weeks, birth weight 876 g ± 194 g) and 16 term controls. At two years of corrected age the quality of mother-child interaction was assessed using the *Erickson Scales* and *Mutually Responsive Orientation Scales*. Developmental outcome was assessed with Griffiths Mental Developmental Scales (GMDS) and Bayley Scales of Infant and Toddler Development - Third Edition (BSID-III).

**Results** There was no difference in mother-child interaction between ELGA children and term controls at two years of corrected age. However, among ELGA children *quality of dyadic relationship*, *maternal sensitive-responsiveness* and *supportive presence* were associated with developmental outcome measured both with GMDS and BSID-III (adjusted p<0.05). This association remained after adjusting for mother's educational level. White matter or gray matter abnormalities in MRI at term equivalent age or gr. III–IV intraventricular hemorrhage during neonatal period were not associated with mother-child interaction.

**Conclusions** This study emphasizes the importance of the quality of mother-child interaction after extremely preterm birth for the development of ELGA child.

#### 1265 WHAT IS BEST FOR PERSISTENT PATENT DUCTUS ARTERIOSUS TREATMENT: IBUPROFEN OR INDOMETHACIN? FOLLOW UP AT 1 AND 2 YEARS

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**Background and Aims** Patent ductus arteriosus (PDA) is particularly a problem of extreme preterm infants. PDA is treated with either indomethacin or ibuprofen. Pulmonary symptoms at 2 yrs, developmental outcome at 1 and 2 yrs and difference in occurrence of bronchopulmonary dysplasia (BPD) between ibuprofen and indomethacin, compared to matched controls without PDA were evaluated.

**Design** Historical cohort-study.

**Methods** Preterm infants <32 weeks GA were included. Neurodevelopmental outcome at 1 and 2 yrs corrected age was evaluated by means of cognitive and motor scales of the Bayley-II or the Bayley-III. The parents received a survey for pulmonary symptoms.

**Results** 89 children (26 ibu, 21 indo, 24 indocontrol and 18 ibu-control) were included. Response to the survey was 82%. Groups did not differ in baseline characteristics. The cognitive and motor development did not differ between the groups at 1 yr. At 2 yrs cognitive scores are significantly better in the ibuprofengroup vs indomethacingroup (p=0.002). After correction of cognitive Bayley-II to Bayley-III scores, there are no differences between groups (p=0.709). Motor development is lower in the indomethacingroup than the indocontrolgroup (p=0.021) at 2 yrs. There were no differences in the incidence of BPD or pulmonary symptoms between the groups.

**Conclusion** Ibuprofen and indometacin have no influence on the pulmonary outcome and the occurrence of BPD. Indomethacin has a negative influence on motor development. Ibuprofen gives a better