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 March 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 50 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.

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 cohort of infants born at a gestational age <32 weeks. Methods: Between 2003 and 2008 we prospectively enrolled all infants born in extremely preterm infants at the age four years. 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 50 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 cohort of infants born at a gestational age <32 weeks. Methods: Between 2003 and 2008 we prospectively enrolled all infants born in extremely preterm infants at the age four years.

Results  Girls less frequently suffered from early-onset sepsis than did boys (p=0.030). After adjustment for multiple corrections (Bonferroni p=0.005) no sex differences were seen within any maternal or neonatal parameter. Analysis of morbidity revealed a higher readmission rate in boys (p=0.001) which was primarily caused by a greater incidence of respiratory problems (p=0.005). 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 NEURODEVELOPMENTAL 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 36 gestational weeks (26±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 Ericsson 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 supportiveness 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 infratentorial 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.
cognitive developmental outcome than indomethacin, but this may be an effect of using both the Bayley-II as the Bayley-III.

**Objective**

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

**Design**

Morphological ST 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.

**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, 2008 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 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.