Background and Aim: The role of N terminal pro-B type natriuretic peptide (NT-pro-BNP) to differentiate cardiac and respiratory causes of dyspnea in adults has been previously investigated. This study is conducted in order to evaluate the diagnostic value of this peptide in differentiating between cardiac and respiratory causes of neonatal respiratory distress.

Methods: A prospective case-control study was conducted on 30 neonates >54 weeks gestational age, presenting with signs of respiratory distress who were evaluated clinically and underwent NT-pro-BNP assay on the 4th and on the 10th days of life if respiratory symptoms continued. Echocardiography was performed for all cases and accordingly classified into cardiac and respiratory problems (CPs/RF) groups based on the presence of significant cardiac defects. The control group included 17 healthy neonates.

Results: Each of the CP and RP groups included 15 infants. The mean value of NT-pro-BNP was significantly higher in the CP group than the RP group on the 4th day of life. The best calculated cut-off point was 196.4 fmol/L (95% CI 61.7–95.2%, sensitivity of 73.3% and specificity of 64.3%). A level of 127 fmol/L could be used to rule out cardiac disease (sensitivity of 100% and specificity of 37%). A level of 480 fmol/L can be used to rule out cardiac disease (sensitivity of 100% and specificity of 64.3%). A level of 196.4 fmol/L (95% CI 61.7–95.2%, sensitivity of 73.3% and specificity of 64.3%) could be used to rule out cardiac disease.

Conclusions: NT-pro-BNP levels can be a useful biomarker to identify neonates with cardiac problems.

A226 ATTENTION PROBLEMS IN VERY LOW BIRTH WEIGHT PRESCHOOLERS

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Background: We carried out a RCT to evaluate the effect of the Infant Behavioral Assessment and Intervention Program (IBAIP) in 176 VLBW infants. This post-discharge intervention program was given until 6 months CA. Positive intervention effects were found on mental outcome at 6 and on motor outcome at 6, 24, and 44 months.

Aim: To evaluate the effect of the IBAIP in VLBW infants on cognitive, neuromotor, and behavioral development at 5.5 years CA.

Methods: Development was assessed using the Wechsler Preschool and Primary Scale of Intelligence (WPPSI-III-NL), the Movement Assessment Battery for Children (MABC-2), the Developmental Test of Visual Motor Integration (VMI), a neurological examination, and the Strength and Difficulties questionnaire (SDQ).

Results: Sixty-nine VLBW children in the intervention and 67 VLBW children in the control group participated at 5.5 years CA (response rate 77.3%). Some important social and perinatal risk factors were at the disadvantage of the intervention group. Verbal and performance IQ-scores < 85 occurred significantly less often in the intervention group (17.9% versus 35.3%, p=0.041, and 7.5% versus 21.2%, p=0.023, respectively). After adjustment, only the odd-ratio for performance IQ was significant: 0.24, 95% CI: 0.06–0.95. Significant intervention effects on mean scores were found on WPPSI-III-NL subtasks block design and vocabulary. After adjustment, mean scores were significantly better in the intervention group on these WPPSI-III-NL subtasks, MABC-2 component aiming and catching and the VMI.

Conclusions: The IBAIP leads to improvement in intelligence, ball skills and visual-motor integration at 5.5 years CA.

A227 VISUAL SENSORY AND PERCEPTIVE FUNCTIONS IN VERY LOW BIRTHWEIGHT (VLBW) PRESCHOOLERS

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Introduction: Recent meta-analytic findings show impaired visual perceptual performance for VLBW children. Little is known about relationships between visual sensory and visual perceptive processes in VLBW children.

Methods: VLBW children (n=121) and age matched controls (n=50) were assessed using tests for oculomotor functioning (eye position, motility, convergence, nystagmus and torticollis), visual sensory functions (visual acuity, visual field, contrast sensitivity, color perception and stereovision) and visual perceptive abilities (form and motion coherence, Position in Space, Figure-Ground, Visual Closure Form Constancy and face perception).

Results: Compared to term born controls, VLBW children showed more disorders of eye position (p=0.01) and convergence (p=0.08). For visual sensory functions, VLBW children had lower single symbol (p<0.001), but not different line symbol (p=0.06) visual acuity and displayed reduced or absent stereovision more often (p=0.04). Visual perceptive tasks showed reduced performance on both form and motion coherence tasks (p=0.01) and on the subtests Position in Space (p=0.001), Figure-Ground (p=0.002), and Visual Closure Form.
Background Worldwide 6–9% of all children are born moderately preterm (32−35 weeks’ gestation). They are at risk for developmental delay in early childhood. Knowledge on the influence of antenatal maternal, fetal, and delivery-related factors on the development of moderately preterm-born children is limited.

Objective To determine the association between developmental delay in early childhood and antenatal factors in moderately preterm-born children.

Design/methods We measured development with the Ages and Stages Questionnaire (ASQ) at age 43–49 months in 834 moderate preterm-born children born in 2002–2003, in a community-based cohort study.

A total ASQ score >2SD below the Dutch mean reference was considered to indicate developmental delay. Data on maternal, fetal, and delivery-related factors were obtained from medical records. We used logistic regression to estimate odds ratios (ORs) for developmental delay, adjusted for socio-demographic variables.

Results In univariate analyses, several fetal and maternal factors were associated with risk of developmental delay. In multivariate analyses, only pre-existing obesity (odds ratio (OR) 3.0, 95% confidence interval (CI): 1.5–5.8), multiparity (OR: 2.8, CI: 1.6–4.9), and delivery-related factors were obtained from medical records. We used logistic regression to estimate odds ratios (ORs) for developmental delay, adjusted for socio-demographic variables.

Conclusions Of all antenatal factors studied, no modifiable factors were associated with development with the Ages and Stages Questionnaire (ASQ) at age 43–49 months in 834 moderate preterm-born children born in 2002–2003, in a community-based cohort study.

Methods Participants. 362 infants aged 10–24 months, with at least one of: weight < 1500g, < 34 completed weeks gestational age, 5-min Apgar < 7, HIE. Children with impairments preventing fair assessment by ERIC were excluded. Parents/caregivers completed ERIC at home before administration of the Cognitive Scale of the Bayley Scales of Infant Development III. Delay was defined as a prematurity-corrected Bayley score < 80 (Moore et al, 2011).

Results Nineteen infants were delayed, with age-corrected ERIC scores lower than those without delay (p<0.001). On ROC analysis, Area Under the Curve was 0.86, with 83% sensitivity (95% CI 66–99.9%), 79% specificity (75–83%), 19% Positive Predictive Value (PPV) (2–36%), and 98% Negative Predictive Value (NPV) (96–99.6%). The low PPV reflects low prevalence of delay (5.2%) in this sample.

Conclusions ERIC provides a useful diagnostic screening tool, able to rule out developmental delay in this population (NPV = 98%).

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Background The Cryotherapy for Retinopathy of Prematurity Cooperative Group showed that the severity of ROP was a marker for functional disability at 5.5 years in infants ≤1250 g BW who were born in the late 1980s.

Objective To determine whether severe ROP remains a strong predictor of visual and non-visual disabilities at age 5 years in infants ≤1250 g BW who were enrolled in the CAP trial between 1999 and 2004.

Methods 5-year follow up of 1580 surviving CAP children with known ROP status. Severe ROP was defined as stage 4 or 5 disease or receipt of retinal therapy in at least one eye. Outcomes were disabilities in 6 domains, and including cognitive impairment (Full Scale IQ<70), motor impairment (GMFCS level 2–5), deafness and blindness. Odds ratios were adjusted for antenatal steroids, gestational age, sex, multiple birth, and mother’s education.

Results There were 94 survivors with and 1486 without severe ROP. Rates of visual and non-visual disabilities were significantly higher in children with severe ROP (Table 1).