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 >34 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 RF groups included 15 infants. The mean value of NT-pro-BNP was significantly higher in the CP group than the RF 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 127fmol/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 in cardiac disease (sensitivity of 100% and specificity of 37%). A point was 196.4 fmol/L (95% CI 61.7–95.2%, sensitivity of 73.3% and specificity of 64.3%). In between these 2 levels, there is a grey zone with 5 cases (33.3%).

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

324 ATTENTION PROBLEMS IN VERY LOW BIRTH WEIGHT PRESCHOOLERS

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Aims To compare very low birth weight (VLBW) children’s performance on attention measurements at preschool age to term-born peers, and to assess associated risk factors.

Methods Attention was assessed in 151 VLBW preschoolers and 41 term-born peers at 44 months of corrected age, using the Attention Task of the Developmental Neuropsychological Assessment, and the Gift Delay task. Parents completed the Attention Problems domain of the Child Behavior Checklist (CBCL-AP), the Inhibit domain of the Behavior Rating Inventory of Executive Function (preschool version), and the Inattentive/Distractibility scale of the Sensory Profile. The investigator completed the Attention domain of the Miller Assessment for Preschoolers’ Behavior During Testing (BDT-AD). Potential perinatal and socio-demographic risk factors for attention problems were analyzed using logistic regression analysis.

Results Compared with term-born peers, VLBW children scored worse on five out of six attention measurements and had significantly more abnormal scores on the CBCL-AP and BDT-AD. Analyses of BDT-AD indicate that VLBW children mostly scored abnormally on the items regarding attention maintenance. VLBW children were at higher risk for attention problems according to a composite score of significant attention problems (OR 4.6, 95% CI: 1.7–12.4). Risk factors for attention problems were having a mother born abroad (OR 3.5, CI: 1.7–7.2) and bronchopulmonary dysplasia (BPD) (OR 2.5, CI: 1.0–6.0).

Conclusions At the time of school entry, VLBW children have more difficulty maintaining attention than their term-born peers. Both social and biological risk factors were predictive of attention problems. Using the CBCL-AP and BDT-AD may lead to timely intervention.

325 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 perceptual 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 perceptual 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