

as it happens in IUGR. To assess changes in neural connectivity in the hippocampus in IUGR animals, the hippocampus synaptic network has been analysed through three different synaptic proteins, Postsynaptic Density Protein 95 (PSD95), Synaptophysin and Synaptosome-associated Protein of 25 KDa (SNAP25).

**Methods** IUGR was induced by meso-ovarian vessels' cauterization in pregnant rats. Sham surgery was performed in control animals. The pups were divided into: Control, Ischemic and IUGR (birth weight < 2 SD). 25 days after birth, animals were subjected to an aquatic learning test. At day 35, they were sacrificed. Synaptic protein levels were analysed by immunochemistry staining and Western blotting.

**Results** There were differences in the learning outcomes between Control, Ischemic and IUGR animals. The analysis of PSD95, showed a gradual staining reduction from Controls to Ischemic to IUGR. There were no differences between groups in Synaptophysin immunostaining. The intensity of SNAP25 staining was lower in Ischemic and IUGR than in Controls. These results were corroborated by western blot analysis.

**Conclusions** IUGR animals displayed reduced protein levels of PSD95 and SNAP25 in the hippocampus with respect to Control animals, suggesting a decrease in functional synapses.

## 1256 QUALITY OF GENERAL MOVEMENTS AFTER TREATMENT WITH LOW-DOSE DEXAMETHASONE IN PRETERM INFANTS AT RISK FOR BRONCHOPULMONARY DYSPLASIA

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MM Hitzert, ME van der Laan, AM Roescher, AF Bos. *Division of Neonatology, Beatrix Children's Hospital, University Medical Center Groningen, Groningen, The Netherlands*

**Background** Postnatal dexamethasone (DXM) is widely used to treat preterm infants at risk for bronchopulmonary dysplasia. Previously, it was reported that high-dose DXM leads to deteriorated quality of general movements (GMs). We determined neurological functioning in infants after low-dose DXM treatment, assessed by the GM-quality until three months post term.

**Methods** We included preterm infants, admitted to our NICU between 2010–2012 and treated with DXM (starting dose 0.25 mg/kg/d). GM-quality was assessed before (day 0), during and after treatment until three months post term. We determined the change in GM-quality by comparing the GM-quality of day 0 with the GM-quality of the last video recording. Additionally, we calculated a motor optimality score (MOS), ranging from 8 (low optimality) to 18 (high optimality).

**Results** Sixteen infants were included [median GA 26.9 wks (25.0–29.7); BW 800 g (620–1665)]. Before treatment, 4 infants had normal GMs which remained normal after starting treatment. GM-quality improved in 8 of 12 initially abnormal infants (Mc Nemar;  $P=0.008$ ), whilst MOS slightly increased: median 10.5, 12.0 and 12.5 on days 0, 1 and 7, respectively (NS). Cumulative DXM doses, treatment duration and postnatal ages at starting DXM were not associated with change in GM-quality. Infants whose GMs improved were ventilated for a shorter period than infants whose GMs remained the same quality ( $P=0.065$ ).

**Conclusions** GM-quality did not deteriorate after DXM treatment but rather improved in infants with initial abnormal GMs. Our findings suggest that neurological functioning until three months post term is not adversely affected after low-dose DXM.

## 1257 THE NEURODEVELOPMENTAL ASSESSMENT OF VERY LOW BIRTH WEIGHT INFANTS AT 4–6 YEARS OF AGE

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<sup>1</sup>N Kavas, <sup>1</sup>AE Arısoy, <sup>2</sup>A Bayhan, <sup>3</sup>B Kara, <sup>1</sup>A Günlemez, <sup>1</sup>G Türker, <sup>1</sup>M Oruç, <sup>1</sup>AS Gökulp. <sup>1</sup>Neonatology; <sup>2</sup>Pediatrics; <sup>3</sup>Pediatric Neurology, Kocaeli University Medical Faculty, Kocaeli, Turkey

The major and minor neurodevelopmental morbidities among premature infants become an important issue because of the increase in the number of surviving premature newborns.

The Aim of this study was to examine the cognitive, neuromotor, emotional and behavioral outcomes of the premature newborns at 4–6 years of age born with very low birth weight and to investigate the relationship between neuromotor and neurocognitive development.

The neuromotor status of 68 children were evaluated according to Touwen neurological examination, 64 children were assessed using Stanford-Binet and Peabody Picture Vocabulary Test, 65 children using Strength and Difficulties Questionnaire and Vineland Adaptive Behavior Scale.

Three cases were already diagnosed and followed as CP. According to Touwen examination 28 (%41.2) children were normal, 35 (%51.5) had simple minor neurological dysfunction (MND), 2 (%2.9) had complex MND. The mean IQ score was  $90.1\pm 10.9$ . The rate of hyperactivity, behavioral problems and emotional problems were in order %60, %33.8 and %53.8. The children were diagnosed as having a delay of  $14.9\pm 10.6$  month for conducting,  $10.6\pm 8.6$  month for daily activities,  $10.7\pm 11.5$  month for social competence and a delay of  $6.3\pm 10.2$  month for motor behavior. The cognitive and neuropsychological results of the 35 children with MND and 28 children with normal neuromotor status were compared. The children with MND had significantly lower mean IQ score, more delay for motor behavior and they were more hyperactive.

Majority of the children who were considered as normal had cognitive impairment, language, behavior/emotional and neuromotor problems in various degrees.

## 1258 HEARING IN PRETERM INFANTS WITH POSTNATALLY ACQUIRED CYTOMEGALOVIRUS INFECTION

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<sup>1</sup>J Nijman, <sup>2</sup>BGA van Zanten, <sup>1</sup>AKM de Waard, <sup>1</sup>C Koopman-Esseboom, <sup>1</sup>LS de Vries, <sup>1</sup>MA Verboon-Macolek. <sup>1</sup>Neonatology, University Medical Center Utrecht; <sup>2</sup>Otorhinolaryngology and Head & Neck Surgery, Rudolf Magnus Institute of Neuroscience, University Medical Center Utrecht, Utrecht, The Netherlands

**Background and Aims** Long-term sequelae of breast milk-associated cytomegalovirus (CMV) infection in preterm infants are insufficiently evaluated. We studied the hearing of preterm infants with postnatal CMV infection within the first and second year of life.

**Methods** Preterm infants (GA<32wks) admitted to our NICU between 2003 and 2011, and diagnosed with CMV infection using CMV PCR of urine at 40wks were included. Congenital infection was excluded in all. Hearing was tested using auditory brainstem response (ABR) in the neonatal period and during the first and second year of life. Neurodevelopmental outcome was estimated using the Griffiths mental developmental scale (GMDS) at 18 months.

**Results** Eighty-eight preterm infants were diagnosed with postnatal CMV infection of whom four were lost to follow-up. All infants had normal hearing in the neonatal period. ABR-tests were performed in 64/84 (76%) infants during the first year of life (median corrected age 7 months, range 2–11) and in 18/84 (21%) infants during the second year (median corrected age 33 months, range 12–50). None of the infants developed SNHL. Mean GMDS score evaluated so far in 58/84 (69%) infants at 15.8 months corrected age (range 13.0–21.0) was 104.4 (SD 9.9) and mean score of the language subscale was 16.7 months (SD 2.1). There were no differences in clinical data, cerebral ultrasonography results, viral load and GMDS scores between infants with hearing tests and non-tested infants.