

After 48 h of treatment a significant decline in bicarbonate levels (from  $35.3 \pm 4.7$  to  $31.1 \pm 3.9$  mmol/L,  $p < 0.001$ ), pH (from  $7.45 \pm 0.05$  to  $7.41 \pm 0.06$ ,  $p < 0.001$ ), and PCO<sub>2</sub> (from  $52.9 \pm 10$  to  $51.2 \pm 10$  mmHg,  $p = 0.002$ ) were found, whereas anion GAP increased (from  $6.8 \pm 9.8$  to  $8.7 \pm 3.8$ ,  $p = 0.001$ ). Mechanical ventilation was in use in 102 patients, (31,6% were extubated during acetazolamide treatment).

Average Acetazolamide dose was 8,46 mg/Kg/day. None of the patients suffered from serious side-effects attributable to Acetazolamide.

**Conclusions** Acetazolamide treatment improved metabolic alkalosis secondary to diuretic treatment in critically ill children, contributing to a decrease in PaCO<sub>2</sub>. Enteral administration was effective and well tolerated without serious adverse effects.

### PS-244a IS VITAMIN D DEFICIENCY A RISK FACTOR FOR URINARY TRACT INFECTION IN CHILDREN?

<sup>1</sup>M Tekin, <sup>1</sup>C Konca, <sup>1</sup>V Celik, <sup>1</sup>H Almıs, <sup>2</sup>Z Kahramaner, <sup>2</sup>A Erdemir, <sup>3</sup>A Gulyuz, <sup>4</sup>F Uckardes, <sup>1</sup>M Turgut. <sup>1</sup>Pediatrics, Adiyaman University School of Medicine, Adiyaman, Turkey; <sup>2</sup>Pediatrics Neonatology Clinic, Adiyaman University School of Medicine, Adiyaman, Turkey; <sup>3</sup>Pediatrics, Sevgi Hospital, Malatya, Turkey; <sup>4</sup>Statistics, Adiyaman University School of Medicine, Adiyaman, Turkey

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**Background and aims** There is increasing evidence that vitamin D deficiency plays an important role in susceptibility to infections. We aimed to examine whether there is any association between serum levels of 25-hydroxy vitamin D (25(OH)D3) and urinary tract infections (UTI) among children.

**Methods** Serum calcium (Ca), phosphorus (P), alkaline phosphatase (ALP), parathormone (PTH) and serum 25(OH)D3 levels were measured in 82 children aged 2 months to 12 years with first episode of UTI, not having any risk factor for UTI, and 64 healthy control children. The age, gender, weight, height, fever, vitamin D or calcium supplementation, urinalysis and urine culture were recorded.

**Results** The serum levels of 25(OH)D3 were significantly lower in the study group compared to healthy control group ( $11.69 \pm 3.25$  ng/mL vs.  $27.57 \pm 4.72$  ng/mL;  $p < 0.001$ ). There was statistically significant difference in serum 25(OH)D3 levels between the patients with upper UTI compared to the patients with lower UTI ( $8.63 \pm 2.76$  ng/mL vs.  $14.22 \pm 2.97$  ng/mL;  $p < 0.001$ ). The serum levels of 25(OH)D3 were significantly lower in girls compared to the boys in the study group ( $10.91 \pm 3.42$  ng/mL vs.  $13.20 \pm 4.38$  ng/mL;  $p < 0.001$ ). Multivariate analysis showed that a serum 25(OH)D3 level of  $< 15$  ng/mL (odds ratio 3.50, 95% confidence interval 1.62–7.57;  $p = 0.001$ ) was associated with UTI in children.

**Conclusions** Our results suggest that vitamin D deficiency is a risk factor for UTI in children and low serum level of vitamin D in girls is one of the reason for prone to UTI.

Abstract PS-244a Table 1

Variable	OR (95% CI)	p value
25(OH)D3 of $<15$ ng/mL	3.503 (1.621-7.571)	0.001
CRP (mg/dL)	1.016 (1.012-1.020)	0.000
WBC (/mm3)	1.003 (1.001-1.005)	0.003

## Neurodisability

### PS-245 IS EARLY DETECTION OF ATTENTION PROBLEMS IN PRETERM CHILDREN POSSIBLE? THE VALUE OF NEUROPSYCHOLOGICAL ASSESSMENT AT PRESCHOOL AGE

<sup>1</sup>V Giordano, <sup>2</sup>U Leiss, <sup>3</sup>S Brandstetter, <sup>3</sup>M Hayde, <sup>3</sup>K Klebermass-Schrehof, <sup>3</sup>R Fuiko, <sup>2</sup>L Weiler. <sup>1</sup>Department of Pediatrics and Adolescent Medicine. Division of Neonatology Pediatric Intensive Care and Neuropediatrics, Medical University of Vienna, Vienna, Austria; <sup>2</sup>Department of General Pediatrics Division of Neuro-Oncology, Medical University of Vienna, Vienna, Austria; <sup>3</sup>Department of Pediatrics and Adolescent Medicine Division of Neonatology Pediatric Intensive Care and Neuropediatric, Medical University of Vienna, Vienna, Austria

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**Background** Advances in neonatal intensive care have improved the survival rate of preterm babies. However, despite the increased survival rate of these babies, the risk for cognitive and behavioural problems at school age has increased. These problems are often attributable to specific attentional deficits. The early detection of attentional problems is therefore a challenging but important endeavour for clinicians.

**Objective** The investigation of attentional functioning in all its subcomponents in preterms children at preschool age.

**Methods** Preterm (N = 56) and full-term neonates (N = 56) between 5;5 and 6;11 years (average 5;7), matched for age, were assessed for the following attentional components: alertness, sustained attention, processing speed, orienting, perception, focused attention, go/nogo, distractibility, divided attention and flexibility. Each construct was assessed through subtests of the following neuropsychological batteries: KITAP/TAP and HAWIK-IV. Further factors such as parental ratings and descriptive item-based evaluation of the child's behaviour during the neuropsychological assessment were also considered.

**Result** Preterms show poor attentional performance in sustained attention, focused attention and distractibility, as well as reduction of processing speed in a visual search task, divided attention and flexibility. Decrease of volitional attention compared to automatic attention was also identified. No problems were detected in alertness and inhibition (go/nogo). Additionally, a higher rate of test-aborts, decreased motivation, and poor parental ratings were detected among the preterm population.

**Conclusion** The neuropsychological results highlight the difference of attentional functioning between preterm and full-term neonates and permit an early detection of attention deficits.

### PS-246 SELF-REPORTED QUALITY OF LIFE AT 19–23 YEARS AND CORRELATIONS WITH MOTOR SKILLS IN YOUNG VLBW ADULTS WITHOUT CEREBRAL PALSY

<sup>1</sup>KAI Evensen, <sup>2</sup>IM Husby, <sup>2</sup>MS Indredavik, <sup>2</sup>AM Brubakk, <sup>2</sup>J Skranes. <sup>1</sup>Public Health and General Practice, Norwegian University of Science and Technology, Trondheim, Norway; <sup>2</sup>Laboratory Medicine Children's and Women's Health, Norwegian University of Science and Technology, Trondheim, Norway

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**Objective** To study changes in self-reported quality of life (QoL) in very low birth weight (VLBW:  $\leq 1500$  g) young adults, and to examine correlations between QoL and motor skills in young adult age.

**Design/methods** A hospital-based follow-up study of 28 VLBW young adults without cerebral palsy and 29 term-born controls.

Data was collected by the Short Form 36 Health Survey (SF-36) at 19 and 23 years, and the Grooved Pegboard test (GP), Trail Making Test-5 (TMT-5), Movement Assessment Battery for Children-2 (MABC-2) and High-level Mobility Assessment Tool (HiMAT) at 23 years.

**Results** At 19 years of age, there were no group differences in SF-36 scores, whereas VLBW participants at 23 years had lower physical functioning, role-physical, social functioning and role-emotional scores, and lower physical and mental component scores than controls ( $p < 0.05$ ). In the VLBW group, the change from 19–23 years was  $-2.6$  (95% CI:  $-4.5, -0.6$ ) points for the physical, and  $-3.7$  (95% CI:  $-6.4, -0.9$ ) points for the mental component score ( $p = 0.01$ ). The physical component score correlated with results on TMT-5, MABC-2 and HiMAT, and the mental component score with TMT-5, after adjustment for intelligence quotient. Corresponding findings were not seen in the control group (change in physical and mental component scores:  $0.3$ ; 95% CI:  $-2.0, 2.6$  and  $-0.1$ ; 95% CI:  $-3.3, 3.3$ ) ( $p > 0.8$ ), and no correlations with motor skills were found.

**Conclusion** At 23 years, VLBW participants without cerebral palsy reported poorer QoL than controls, and lower QoL scores were correlated with poorer motor skills. It may be of concern that QoL seems to decrease as the young VLBW adults get older.

#### PS-247 ASSOCIATION OF MOTOR FUNCTION WITH BASAL GANGLIA AND THALAMUS VOLUMES IN DYSKINETIC CEREBRAL PALSY

<sup>1</sup>O Laporta-Hoyos, <sup>1</sup>J Ballester-Plané, <sup>2</sup>E Vázquez, <sup>2</sup>I Delgado, <sup>1</sup>A Narberhaus, <sup>3</sup>P Póo, <sup>4</sup>A Macaya, <sup>5</sup>M Meléndez, <sup>5</sup>T Castelló, <sup>3</sup>ME Russi, <sup>6</sup>V Tenorio, <sup>7</sup>L Zubiaurre-Elorza, <sup>1</sup>J Miralbell, <sup>1</sup>D Segarra, <sup>1</sup>R Pueyo. <sup>1</sup>Psychiatry and Clinical Psychobiology, University of Barcelona, Barcelona, Spain; <sup>2</sup>Radiology, Hospital Vall d'Hebron, Barcelona, Spain; <sup>3</sup>Neurology, Hospital Sant Joan de Déu, Barcelona, Spain; <sup>4</sup>Paediatric Neurology, Hospital Vall d'Hebron, Barcelona, Spain; <sup>5</sup>Physical Medicine and Rehabilitation, Hospital Vall d'Hebron, Barcelona, Spain; <sup>6</sup>Institute Clinic of Gynecology Obstetrics and Neonatology, Hospital Clinic de Barcelona, Barcelona, Spain; <sup>7</sup>The Brain and Mind Institute, Western University, London, Ontario, Canada

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**Background and aims** Dyskinetic Cerebral Palsy (CP) is mainly characterised by basal ganglia and thalamus injury as well as worse motor functioning compared to other CP types. Associations of higher levels in Gross Motor Function Classification System (GMFCS) and in Bimanual Fine Motor Function (BFMF) with basal ganglia and thalamus lesions have only been described qualitatively. This study aims to analyse the quantitative relationship of basal ganglia and thalamus volumes with motor status measured by means of the three Surveillance of Cerebral Palsy in Europe (SCPE) recommended scales: GMFCS, BFMF and Manual Ability Classification System (MACS).

**Methods** Gross and fine motor status of 15 dyskinetic CP participants with signs of perinatal asphyxia (age range: 12–34) were assessed. 3T-MRI was obtained and Free Surfer software was used to estimate basal ganglia and thalamus volumes. Partial correlations controlling for age were performed.

**Results** Caudate ( $r = -.70$ ;  $p < 0.01$ ), putamen ( $r = -.59$ ;  $p < 0.05$ ) and pallidum ( $r = -.60$ ;  $p < 0.05$ ) volumes correlated with GMFCS. Moreover, caudate ( $r = -.68$ ;  $p < 0.01$ ), putamen ( $r = -.63$ ;  $p < 0.05$ ) and thalamus ( $r = -.55$ ;  $p < 0.05$ ) volumes correlated with MACS. BFMF was not related with basal ganglia and thalamus measures.

**Conclusions** Greater gross and fine motor impairment severity is associated with lower basal ganglia and thalamus volumes,

which is consistent with qualitative results of previous studies. This is the first evidence of a quantitative relationship between two widely used scales of motor functioning and deep brain grey matter in dyskinetic CP. GMFCS and MACS, but maybe not BFMF scale, are sensitive to basal ganglia and thalamus injury in this CP type.

#### PS-248 CEREBRAL MRI FINDINGS IN CHILDREN WITH CEREBRAL PALSY (CP) IN NORWAY

<sup>1</sup>GL Andersen, <sup>2</sup>J Skranes, <sup>1</sup>SJ Hollung, <sup>2</sup>T Vik. <sup>1</sup>The Cerebral Palsy Register of Norway, Vestfold Hospital Trust, Tønsberg, Norway; <sup>2</sup>Department of Laboratory Medicine Children's and Women's Health, University of Science and Technology, Trondheim, Norway

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**Background and aims** CP is a clinical diagnosis caused by a brain anomaly or injury early in life. Cerebral MRI is increasingly used in the diagnostic work-up to demonstrate the location and extension of the lesion, and may in addition provide clues to aetiology and timing. The aim of this study was to describe the distribution of different MRI patterns in children with different subtypes of CP.

**Methods** Data on 1178 children (684 boys) born 1999–2008 were retrieved from the CP Register of Norway (CPRN). On the CPRN record form, completed when the children are 5–6 years old, MRI findings are classified as 'Normal', white matter injury (WMI), focal or diffuse cortical lesions, lesions of the basal ganglia (BG) and malformations.

**Results** Among the 711 (60.4%) children with CP and available cerebral MRI, 14.2% had 'normal' findings; while WMI was the most common lesion (48%), followed by focal cortical (18.6%), diffuse cortical (14.1%) and BG lesions (13.2%). Malformations were found in 8.2% of the children. Among those with WMI, 52% were born preterm and spastic bilateral CP was the most common subtype (47%). 80% with focal cortical lesions had unilateral CP. Among those with normal MRI the spastic bilateral subtype was most common (48.5%).

**Conclusions** Cerebral MRI scans were performed in more than 60% of Norwegian children with CP at age six. Nearly 50% had lesions consistent with an injury associated with preterm birth (WMI), whereas only 13% had BG lesions considered to typically reflect intrapartum events.

#### PS-249 SYDENHAMS CHOREA- THE IRISH EXPERIENCE

M Crealey, MD King. Neurology, Temple St Childrens Hospital, Dublin, Ireland

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Sydenham's chorea (SC) is an autoimmune movement disorder characterised by uncoordinated involuntary movements (chorea), emotional instability and hypotonia. It is one of the major Jones diagnostic criteria of rheumatic fever caused by group A streptococcus bacterium (GAS).

##### Aims

1. Report on the incidence of SC diagnosis in Ireland (including Northern Ireland) July 2006–July 2013.
2. Describe the clinical presentation, investigation and management.

**Methods** A retrospective observational study was undertaken of all children with a clinical diagnosis of SC or "SC like"