

**Background and aims** Paediatric stroke, although uncommon when compared to adult stroke, has a high mortality and morbidity rate. Between 2 and 13 children per 100,000 per year are likely to have a stroke, with 5% - 10% resulting in death and more than 50% developing neurological and cognitive defects. The aim was to review the current literature and discuss risk factors, aetiology, presentation and management of paediatric stroke.

**Methods** Literature review.

**Results** Paediatric stroke is more common amongst boys and is classified as arterial ischaemic or haemorrhagic, depending on the underlying causes. However no type of paediatric stroke is predominant over the other. There is a broad spectrum of risk factors associated with paediatric stroke and the underlying cause often involves multiple factors such as arteriopathies, maternal infections and haematological disorders. The common risk factors of hypertension or diabetes associated with adult stroke play a very minor role in paediatric stroke development. Paediatric stroke is often misdiagnosed or diagnosed at a very late stage due to the non-specific clinical presentation which depends on factors such as age and type of stroke. The medical or surgical management of paediatric stroke depends on the type, aetiology, timing and the extent of the stroke.

**Conclusion** Paediatric Stroke is a challenging condition in which few distinct guidelines of the most appropriate treatment exist. Further research and studies should be carried out since much of the knowledge and guidelines are currently based on adult stroke.

#### PO-0861 THE QUALITY OF GENERAL MOVEMENTS DURING THE NEONATAL PERIOD IN MODERATE AND LATE PRETERM INFANTS

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10.1136/archdischild-2014-307384.1486

**Objective** The assessment of general movements (GMs) is a widely used technique to evaluate neurological (dys)function and to predict neurodevelopmental outcome in infants. De Vries and Bos (Early Hum Dev 2008, 2010) demonstrated that abnormal GMs are often seen in early recordings in extremely low birth weight (BW) and preterm (< 32 weeks) infants. Aim of our study was to assess whether this finding could be replicated for moderate and late preterm infants (32/0–36/6 weeks' gestation).

**Methods** We assessed GMs during the first 2 weeks (Median = 7 days; 5–8 days) of 50 moderate and late preterm infants (31 males). GM quality (global and detailed scoring) was analysed off line and related to neonatal morbidity (mainly IRDS) and other clinical factors (birth weight, need for oxygen and intensive care).

**Results** Mean gestational age (GA) of the infants was 35 weeks' gestation (SD = 9 days); mean BW was 2207 grams (SD = 400). Abnormal GMs were observed in 23 infants: 19 poor repertoire, 2 infants cramped synchronised, and 2 chaotic. Yet another 10 infants were scored as normal but their detailed GM score revealed a reduced motor optimality. GM abnormalities were not related to perinatal factors, such as GA, birth weight or neonatal morbidity.

**Conclusion** Almost every second infant had abnormal GMs during the first 2 weeks of life. Whether such an early and single GM assessment will be related to the neurodevelopmental outcome has still to remain open, as the individuals of our study group did not yet reach the age of an outcome assessment.

PO-0862 WITHDRAWN

#### PO-0863 LONGITUDINAL CHANGES OF CORTICAL THICKNESS FOLLOWING PREMATURE BIRTH

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10.1136/archdischild-2014-307384.1487

During the early postnatal period the cerebral cortex undergoes substantial reorganisation. Early changes in environmental factors (e.g. premature birth, socio-economic status) affect the reorganisation of the cerebral cortex.

In order to answer the question of how premature birth affects the cortex, we have analysed T1 MR images (n = 14) of prematurely born children (26–35 GW) at term equivalent age. Furthermore, in order to identify the factors affecting the maturation of the cerebral cortex at school age we have analysed T1 MR images of prematurely born children at school age (n = 42, 6.62 ± 0.48 years). While the segmentation of cerebral tissue in school age children was performed using the automatic method (CIVET), we have developed a new morphology-driven automatic segmentation method for the segmentation of cerebral tissue at term equivalent age. The grey and white matter surface meshes were extracted and regional volumes of the cortex and cortical thickness were estimated. Cortical metrics were calculated using the advanced MR image processing tools developed at MNI.

Mean cortical thickness, from term equivalent age to school age, showed a two-fold increase in prematurely born children. Regional variations of cortical thickness in prematurely born children at term equivalent age and school age indicated that the limbic cortex is the first to thicken while the frontal cortex lags behind. Parents' socio-economic status showed positive correlation with mean cortical thickness at school age.

In conclusion, this is the first reported analysis of longitudinal changes of cortical thickness from term equivalent age to school age in prematurely born children.

## Neurology and Developmental Paediatrics

#### PO-0863a PUBERTY PERIOD AND EPILEPSY ONSET

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10.1136/archdischild-2014-307384.1488

**Purpose** Study connection between epilepsy onset and puberty period at female patients.

**Methods** work was the part of the antiepileptic drugs reproductive side effects study. Epilepsy onset were studied at 155 female patients older 16 y. Patients were divided into 3 groups

according WHO classification of puberty age: 1gr. - before puberty- 1–9 y.o., 2 gr. – puberty- 10–18, 3 g. – after puberty – older 18. Frequency of epilepsy onset was studied in 4 subgroups of puberty period according phases of maturing of hypothalamo-hypophysial system: 10–11 y.- beginning of hypothalamo-hypophysial hormones secretion, 12–13- beginning menses, 14–15- becoming of ovulatory peak, 17–18- establishment of a constant rhythm of hormones secretion. Ages of epilepsy onset and menarche were compared. STATISTICA for Windows system (version 5.5) was used.

**Results** There were 23 patients (15%) in 1 gr., 92 (59%) – 2 gr, 40 (26%) – 3 gr. Differences in the comparison groups were statistically significant above in puberty ( $p < 0,001$ ). Epilepsy began in childhood in 75%. Epilepsy onset in 4 subgroups of puberty period: subgroup 1–18 patients (in  $\frac{1}{4}$  cases), subgroup 2–35 (almost in  $\frac{2}{5}$  cases), subgroup 3–24 (in  $\frac{1}{4}$  cases), subgroup of 4–15 (less than in  $\frac{1}{5}$  part). Prevalence of epilepsy onset in the integrated age range of 12–16 years was statistically reliable ( $p < 0,001$ ). Both epilepsy onset and menarche occurred in 13% (less than in  $\frac{1}{6}$  part).

**Conclusion** Thus, hormonal changes in puberty often provoked epilepsy onset. It confirms proconvulsive effect of estrogens. Information is very important for patients with burdened neurologic anamnesis.

## Nursing – Endocrinology/Diabetes/ Metabolism

### PO-0864 THE DIFFICULTIES EXPERIENCED BY CHILDREN WITH DIABETES: A QUALITATIVE STUDY

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10.1136/archdischild-2014-307384.1489

**Background and aim** Being a chronic disease, diabetes affects children's life styles, causes changes in their routines and makes them cope with many difficulties of the diabetes treatment. The purpose of this study was to determine the difficulties experienced by children with diabetes.

**Methods** The study used the method of focus group interviews and face-to-face in-depth interviews for qualitative studies. Interviews were held with the 7 children aged 12–18 with type 1 diabetes mellitus on January 2014. Data was collected using a semi-structured questionnaire prepared by the investigators through screening. The children's and their mothers' verbal consents were obtained.

**Results** Concerning the diabetes treatment, all the children stated that they did not like having their fingers pricked every day, found it difficult to get used to needles and they would be happier without needles. Regarding the question, "Are you having a difficulty with controlling your diet", 2 children answered, "I occasionally want to eat sweets but I can't because of my disease" and 2 answered, "While my friends eat anything they want, I can't. I like pasta a lot and I want to eat. But I know I am not allowed to". Regarding the question, "Do you restrict your physical activities due to diabetes?", almost all of them stated that they had a difficulty in physical education lessons and restricted their activities at school.

**Conclusion** In the study, we think that healthcare professionals should provide the convenient support and consultancy services

by taking especially the diabetes treatment of children and their anxieties about living with this disease into consideration.

### PO-0865 THE AGGRESSION AND SELF- INJURY BEHAVIOURS IN ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS

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10.1136/archdischild-2014-307384.1490

**Background and aims** Adolescents tend to have risky behaviours like aggression and self-injury due to the age period characteristics. The risk of aggression and self-injury may increase in adolescents with the addition of chronic diseases. This study was conducted descriptively to determine and compare the aggression and self-injury in those with type 1 diabetes mellitus (T1DM) and healthy adolescents.

**Methods** The study sample consisted of 60 adolescents with T1DM followed up in the child endocrinology polyclinic of a university hospital and 319 healthy adolescents, 15–18 aged, at 9th–12th grade at high school. In the study, the permission of the institution, Ethical Committee, the parent and adolescent consent, the data were collected using a questionnaire form, Aggression Questionnaire (AQ) and Inventory of Statements About Self-injury (ISAS). The descriptive statistics, Shapiro-Wilk, Mann-Whitney U, student t, Ki-kare, Spearman correlation tests were used for analysing data.

**Results** The mean scores of AQ all subscales and the total scale of healthy adolescents were higher than adolescents with T1DM ( $p < 0.05$ ). Mean ISAS scores of adolescents with T1DM were higher than the healthy adolescents ( $p > 0.05$ ). The mean scores of autonomic function, social function and ISAS were positively moderately correlated with the mean scores of total aggression in both healthy and diabetic adolescents ( $p < 0.05$ ).

**Conclusions** Considering the age period characteristics, giving weight to sport (especially team sports), social and cultural activities and education about anger-stress management and effective communication skill to adolescents and their families in school may be recommended.

## Nursing – Intensive Care and Paediatric Emergency Care Medicine

### PO-0866 ASSESSING THE VALIDITY AND RELIABILITY OF THE COMFORT-BEHAVIOUR SCALE IN CHILDREN THREE YEARS OF AGE AND OVER

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10.1136/archdischild-2014-307384.1491

**Background** Self report is considered to be the "gold standard" of pain assessment but is frequently unobtainable in the ICU. The psychometric properties of the COMFORT-Behaviour (COMFORT-B) scale have been evaluated in children under the age of 3 years.

**Aim and objectives** To establish the reliability and validity of the COMFORT-B scale in children > 3 years of age in a PICU setting.