**Epilepsy 2**

**P2319**

**RISK-FACTORS, CLINICAL COURSE AND OUTCOME OF EPILEPTIC SEIZURES IN ANEURISMAL SUBARACHNOID HAEMORRHAGES (SAH)**

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**Background:** Symptomatic epileptic seizures (ES) in SAH represent a hard dilemma, because there exist no evidence-based data and guidelines for management of ES in SAH. The aim of the study was to establish frequency, clinical course and prognosis of seizures in SAH

**Material and methods:** 128 SAH patients with ES were monitored for seizures during 1 year. Patients’ conditions were assessed by Hunt-Hess Scale, GCS, GOS, Barthel Index. All patients were monitored for seizures, and EEG was done as needed. Clinical-demographic data were recorded to find independent correlation

**Results:** 11 patients (8.58%) had at least one seizure following SAH. 6 patients (4.68%) had onset seizures and 5 patients (3.9%) had late epilepsy. Younger age (<50 years), poor clinical grade, thick haemorrhage, hydrocephalus, re-bleeding, increase of mortality rate were related to the occurrence of onset seizures. Cortical infarction and thick haemorrhage were independent risk factors for the incidence of late epilepsy.

**Discussion:** ES after SAH was associated with poor functional recovery and quality of life. As usual anticonvulsant therapy started after the first seizures. Should we treat the first seizures after SAH as epilepsy or should we wait some time to ensure epilepsy?

**P2320**

**SEIZURES IN THE EMERGENCY ROOM: DEFINITE DIAGNOSIS AFTER 2 YEARS OF FOLLOW-UP**

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**Objective:** Quantifying the importance of urgent medical care in patients with seizure disorders treated by the guard of neurology at a tertiary hospital.

**Methods:** Retrospective study of 206 patients with seizures among 2138 patients seen by a neurologist in the emergency department between April 2008 (beginning of neurology guards) and March 2009. We analyzed risk factors for epilepsy and precipitating conditions, seizure type, complementary tests (neuroimaging, analysis, EEG), treatment prescribed and final diagnosis after two years of follow-up.

**Results:** 52% (n=108) were epileptic patients. 7% suffered from acute metabolic disorders, 8% from fever and 12% presented poor compliance of antiepileptic drugs as precipitating conditions. 22% presented epileptic status and 7% associated pseudo-seizures. 48% (n=98) patients came with a first seizure. 30% had a previous structural lesion of CNS. Precipitating factor was identified in 25%. 35% (n=34) showed partial seizures, 48% (n=47) generalized episodes and 17% (n=17) epileptic status (non-convulsive in 65%). Delayed MRI performed in 37% of cases showed lesions not visualized in emergency CT scan in 36% of patients. 24% had focal activity and 11% generalized discharges in EEG. After 2 years 30% were diagnosed with acute symptomatic seizures, 2% of single episodes without recurrence risk, 28% of symptomatic, 27% cryptogenic and 4% idiopathic epilepsies and 9% had syncopes or TIAs. Antiepileptic drugs were prescribed in 67%.

**Conclusions:** 92% of patients diagnosed by a neurologist in the emergency maintained diagnosis after 2 years of follow-up and represent new epilepsies in 61%, who benefit from a correct diagnosis and early treatment.
P2321

VAGAL NERVE STIMULATION THERAPY FOR EPILEPSY IN BUDAPEST

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Vagal nerve stimulation (VNS) is a non-pharmacological therapeutic option for intractable epilepsy patients. According to literature better clinical outcomes were recorded in non-focal and Lennox-Gastaut syndromes (LGS). We followed 25 patients for 2-6 years and measured the effectiveness of the therapy using clinician’s global impression scale (CGI) and patient diaries. The average seizure reduction was 26% that varied between 0% and 80%. It was more pronounced in patients with non focal than with focal epilepsy. The best CGI improvement was in the LGS group. The reduction of generalized tonic-clonic seizures (GTCS) was statistically significant. The side effect profile was good, despite the large number of mild and reversible effects that influenced the stimulation parameters thus probably the effectiveness of the therapy. We suggest that VNS is an optional treatment mostly in therapy resistant Lennox-Gastaut syndrome cases. Reduction of seizure severity may be achieved in patients with multiple seizure types including GTCS seizures. We conclude that VNS is a safe neuromodulatory treatment, but future developments of neuromodulatory approaches are needed.

P2322

SYNAPTIC PLASTICITY AND ICTOGENESIS: A MODELLING STUDY

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Introduction: Despite more than a century of epilepsy research, the basic mechanisms of focal seizure generation are still poorly understood. Advances in nonlinear EEG analysis have demonstrated the existence of preictal activity patterns - distinct functional changes occurring minutes to hours before a clinical seizure which are likely to involve transient reorganization of local functional connectivity at the epileptic focus. Some basic forms of synaptic plasticity operating on such timescales depend on the NMDA receptor which is a known target for certain antiepileptic drugs (AEDs).

Methods: We simulate a network of 1000 neocortical spiking neurons with realistic electrophysiological features, random connectivity and distributed synaptic delays. The strength of individual synapses is allowed to vary continuously through spike timing-dependent plasticity (STDP), a form of NMDA-dependent plasticity. We explore the parameter dependence of stationary behaviour in our model and attempt to reproduce the effects of selected AEDs.

Results: Within selected parameter ranges, we observe instability of the stationary state associated with brief stereotypical patterns of increased neuronal activity with hypersynchronization which suggestively resemble spontaneous epileptic seizures. We also observe “preictal” patterns which predict oncoming seizure-like events. All these phenomena are accompanied by characteristic STDP-mediated reorganizations of functional connectivity and are suppressed by simulated blockade of plasticity.

Conclusions: We present a network model capable of reproducing certain important features of epilepsy including the effects of some AEDs. Our results provide a working hypothesis suggesting potential involvement of synaptic plasticity in ictogenesis and may, in perspective, aid the development of new anti-epileptic strategies.
P2323

DE NOVO STXBP1 MUTATION AND DEVELOPMENTAL DELAY

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Introduction: Mutations in the gene STXBP1 cause mental retardation, non-syndromic epilepsy and early infantile epileptic encephalopathy with suppression burst: The latter condition is also known as Othahara syndrome. Copy number variation (CNV) in 9q and small scale mutations in the STXBP1 gene, i.e. nonsense and splice site mutations, have been described to cause these phenotypes.

Methods: We describe a child with developmental delay, seizures and a de novo partial deletion of STXBP1.

Results: The chromosomal analyses were normal while array Comparative Genomic Hybridization (aCGH) identified the 9q deletion.

Conclusions: ACGH makes it easier to assess different clinical aspects of neurodevelopmental and epileptic disorders.

P2324

ISOLATED NOCTURNAL CHOKING: AN ICTAL SIGN

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Introduction: Choking and snoring are two of the most common symptoms of obstructive sleep apnoea (OSA), and the differential diagnosis of nocturnal choking episodes includes nocturnal panic attacks, laryngospasm and gastroesophageal reflux. We describe a case of isolated ictal choking during sleep.

Case report: A 24-year-old woman, with medical refractory focal epilepsy, probably symptomatic, referred for video-EEG in the context of epilepsy surgery. Her current medications were levetiracetam, topiramate, carbamazepine and risperidone. Seizures were described as brief transient left cephalic deviation with loss of consciousness, occasionally preceded by epigastric aura, occurring in the morning after waking up. There were rare nocturnal seizures with similar semiology. During the video-EEG, frequent electroclinical seizures during sleep were detected, characterized by nocturnal choking with no other motor signs, associated with a sudden appearance of fast rhythmical activity in left fronto-central regions. MRI showed no structural lesions. Ictal SPECT showed a left insular cortex hyperperfusion.

Conclusion: We describe nocturnal choking as an isolated ictal symptom with a left frontal ictal onset zone. There are previous rare case reports of ictal choking in frontal and insular focal epilepsies. This case further emphasizes the need to consider epilepsy in the differential diagnosis of choking during sleep. Ictal breathing symptoms can be attributed to the involvement of central respiratory control centres by ictal phenomena. Further research should study the localizing value of ictal respiratory symptoms. In epileptic patients with no awake seizures, isolated nocturnal choking can be a sign of medical refractory epilepsy.
**P2325**

**EFFECTS OF MODIFIED ATKIN'S DIET IN ADULTS WITH REFRACTORY EPILEPSY**

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**Introduction:** Approximately 30% of patients with epilepsy have refractory epilepsy. We hypothesized that the modified Atkin’s diet would be an effective therapy for adults with intractable epilepsy, as defined as a failure to respond to at least two anticonvulsant medications. In addition, the potential for weight loss may provide added incentive for patients with epilepsy.

**Material and methods:** In a controlled clinical trial, we compared the efficacy, tolerability, and effects of modified Atkin’s diet in adults with refractory epilepsy. The primary outcome was at least 50% decrease in seizure frequency after 2 months of therapy; the secondary outcome was effects of weight loss on seizure frequency.

**Results:** The mean change of seizure frequencies in case and control groups was 2.5±2.4 and 0.5±1.3, respectively and the difference between two groups was statistically significant (p<0.001). An interesting and surprising finding was that a decreased body mass index (BMI) correlated with seizure reduction.

**Conclusion:** The results of this study and comparison with other investigations showed that the modified Atkin’s diet have a positive effect for reduce of seizure in adults epileptic patients and probably we can apply this diet in epileptic patients for control and reduce of seizure. In addition, weight loss may provide added benefits for patients with epilepsy and comorbid obesity.

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**P2326**

**SEIZURE EXACERBATION ASSOCIATED WITH LEVETIRACETAM THERAPY: REPORT OF 5 CASES**

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**Objective:** The paradox effect of antiepileptic drugs (AEDs) is a well-known phenomenon. Such an effect for levetiracetam, a second-generation AED, was hitherto scarcely reported. We present 5 patients who have experienced a prompt and marked increase in seizure frequency following the introduction of levetiracetam.

**Patients:**

Patient 1 (34-year-old male) suffered from idiopathic generalized epilepsy with rare seizures on lamotrigine monotherapy. The addition of levetiracetam was followed by a daily occurrence of generalized tonic-clonic seizures (GTCSs).

Patient 2 (23-year-old female) suffered from epilepsy caused by a cortical dysgenesis. Adding levetiracetam to lamotrigine led to a marked increase in the frequency and severity of focal motor seizures.

Patient 3 (18-year-old female) was newly diagnosed with epilepsy with GTCSs. She was switched from carbamazepine to levetiracetam because of side effects, resulting in a cluster of GTCSs.

Patient 4 (30-year-old female) with juvenile myoclonic epilepsy was seizure-free for over 10 years with valproate. When valproate was switched to levetiracetam because of side effects, GTCSs returned within 2 weeks.

Patient 5 (52-year-old female) with refractory complex partial seizures on lamotrigine + topiramate therapy, the addition of levetiracetam resulted in the return of GTCSs after 30 years. In all patients, the discontinuation of levetiracetam led to prompt improvement or cessation of seizures.

**Conclusion:** Although levetiracetam is an effective AED with a favourable side effect and pharmacokinetic profile, it may also provoke seizures - mainly GTCSs - in rare cases. Physicians should be aware of this phenomenon and closely monitor their patients when levetiracetam is introduced.
P2327

CESSATION OF SEIZURES FOLLOWING SURGICAL RESECTION OF DYSEMBRYOPLASTIC NEUROEPITHELIAL TUMOURS

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Objective: Compare the history of patients before and after surgical resection of their dysembryoplastic neuroepithelial tumour (DNET).

Background: DNET is brain tumour with distinctive clinico-pathological features and a favourable prognosis in relation to control of the tumour and of the associated seizure activity, constitute a group of benign brain tumours that are characterized by intracortical location, multinodular architecture, high degree of cellular polymorphism, foci of cortical dysplasia; and specific glioneuronal elements.

Methods: 16 patients with DNET who underwent surgery for epilepsy, were evaluated in terms of pre and post-surgical seizures, types, frequency and anti-seizure medications, as well as location of lesions on MR findings.

Results: 16 patients presented with recurrent seizures. 14 had been prescribed anti-epileptic drugs (AEDs) prior to surgery and all were unresponsive to drug treatment. All of the patients underwent surgical resection and all were seizure free post-operatively. 15/16 patients were without a seizure after surgical resection. One patient experienced seizures, which were attributed to non-compliance with post-operative AEDs. 13 of all patients received post-operative AEDs. 12/13 patients, including the non-compliant patient, were eventually tapered off all AEDs and have remained seizure free. Only one is currently still on anti-seizure medications due to a recent surgical resection of tumour. The three remaining patients had no seizure despite not being placed on post-operative AEDs.

Conclusions: Complete surgical resection of the tumour is a highly effective means of controlling seizure activity in DNET patients. The efficacy and need for post-operative AEDs as a preventive measure is yet to be determined.

P2328

AORTIC REGURGITATION PRESENTING AS CONVULSIVE SYNOPE WHICH HAD BEEN MISINTERPRETED AS EPILEPSY: A CASE REPORT

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Introduction: Syncope is a transient loss of consciousness, due to cerebral hypoxia caused by decreased blood flow. This may be accompanied by convulsive episodes. Convulsive syncope, cannot easily be distinguished from seizures when the first is accompanied by tonic, tonic-clonic or myoclonic activity.

Case report: A 27-year-old patient presented to the emergency room due to seizure activity. During his stay he developed an episode of generalized tonic-clonic seizures followed by a brief loss of memory and urine incontinence. Brain imaging (CT and MRI) was negative. EEG pattern consisted of diffuse slow waves without paroxysmal activity. In the last 4 months, the patient had suffered from persistent cough and decimal grade fever. He underwent a chest CT, with no findings and negative Mantoux-test. Lumbar punction showed no signs of infection and the ECHO revealed severe endocarditis and aortic regurgitation. Two days afterwards, the patient was admitted to the cardiosurgery department.

Discussion: Misdiagnosis of epilepsy remains a major clinical problem. Our case highlights the importance for a physician to have in mind cardiovascular diseases, when he is dealing with cases of sudden syncope that occur with generalized seizure activity. Syncope, are easily mistaken for epileptic seizures and are notoriously difficult to distinguish from them. In adults with new onset of unexplained seizure activity as well as in patients who were previously diagnosed with epilepsy and unresponsive to drug treatment, all possible explanations and especially heart diseases should be considered.
P2329
DELIRIUM AS MANIFESTATION OF NON-CONVULSIVE STATUS EPILEPTICUS
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Introduction: Non-convulsive status epilepticus is an underdiagnosed entity, which can be hard to recognize and which can result in significant morbidity and mortality. The presentation as delirium should be considered as exemplifies the case described below.

Case report: Male, 76 years old with non relevant past history, including past cognitive or psychopathological disturbance, who was admitted to the emergency room due to delirium marked by inattention, psychomotor agitation and disturbance of sleep-wake cycle. On physical examination there was a lack of contact, right preferential head and eye deviation, left visuospatial hemineglect, inability to understand and execute simple commands, persevering and incoherent speech, delusional ideation and hallucinatory activity, no motor deficit or convulsive movements. Complementary investigation included EEG recording that showed paroxysmal persistent focal, right temporal, and right hemispheric activity supporting the evidence of non-convulsive status epilepticus. The brain imaging by MRI revealed cortical and subcortical multiple haemorrhages suggesting amyloid angiopathy and the functional brain study by PET showed a hypermetabolism on right occipital lobe. The subsequent investigation ruled out neuroinfectious, paraneoplastic, autoimmune or toxic aetiologies. The antiepileptic treatment was pivotal on resolution of clinical and neurophysiological picture.

Conclusion: The wide pathophysiological spectrum of delirium makes the clinical presumption of non-convulsive status epilepticus difficult. Electroencephalography takes a primordial place in the diagnostic task. The electroclinical manifestation as a possible initial presentation of probable amyloid angiopathy becomes even more peculiar this case.

P2330
EPILEPSY IN THE ELDERLY: DILEMMA OF DIAGNOSIS
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Background: Epilepsy is one of the most common diseases among old age patients. Seizure semiology and EEG-changes in elderly patients are often not classic and obvious as in younger age.

Objectives: To report the crucial roles of careful history taking, clinical semiology, EEG changes and MRI findings in determining the causes of epilepsy in old age people.

Design and methods: 44 patients, with age ranged from 65 to 88 years (28 males and 16 females) were enrolled between Jan-2008 and Apri-2010 at Mansoura University Hospitals. Independent neurological examination, EEG record, brain CT and MRI examinations were performed in all patients.

Results: The frequency of seizures was, 47.7%, 38.6%, 22.7% and 50% among patients with diabetic, hypertensive, cardiac history and over the age of 85 years consecutively. Complex partial seizures without aura were reported in 45.5%. Initial EEG was normal in 27.2% that became 18% with repeated EEG recording for the same patients. Focal epileptiform discharges with secondary generalization were reported in 31.3%. Cortical infarction, hemorrhagic infarction, cerebral haemorrhage, metastasis, meningioma, subdural hematoma were reported in 18.1%, 6.8%, 6.8%, 11.3%, 4.5%, and 6.8% consecutively. Meningitis & meningoencephalitis were reported in 4.6%.

Conclusion: Full history, clinical examination, repeated long term EEG and neuroimaging studies are crucial tools for accurate and early diagnosis of epilepsy in the elderly.
**P2331**

**PROGNOSTIC VALUE OF CORTICAL VISUAL IMPAIRMENTS IN CHILDREN WITH SYMPTOMATIC EPILEPSY**

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**Objective:** To evaluate the prognostic value of cortical visual impairments in children with symptomatic epilepsy.

**Materials and methods:** In the study were included 90 patients with symptomatic epilepsy; aged from 1.5 months to 3.5 years. All the children were examined with clinical-neurological examination, investigation of visual evoked potentials to flash (VEP); ophthalmoscopy. Follow-up study duration was 4-6 months.

**Results:** Cortical visual impairments were diagnosed in 23 (25.5%) patients. These patients had frequent paroxysms in form of motor phenomena, infantile spasms; disorders of the motor components in form of muscle hypertonia, atonia, central paresis. According to the data from VEP, significant delay of P100 component latency by 148.3±26.8 msec (p<0.001) was identified. During follow-up period with underlying adequate anticonvulsant therapy, visual function improvement in terms of eye fixation reflex on bright objects was observed only in 4 (17.4%) cases. There were no significant differences in the time course of the main component of P100 VEP. In patients with cortical visual impairment complete relief during anticonvulsant therapy administration was observed in 8 (38.1%) cases, while in patients without visual impairment - in 21 (46.7%) cases. Thus, in most of the patients (82.6%) epileptic cortical visual impairments were consistent, which is confirmed by VEP. In these patients low efficiency of anticonvulsant therapy was distinguished.

**Conclusion:** Cortical visual impairments are unfavourable signs for prediction of epilepsy clinical course and visual impairments.

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**P2332**

**IMMUNOLOGICAL CORRELATES IN CHILDREN WITH EPILEPSY**

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**Objective:** The purpose of this study was to determine antiphospholipid antibodies (aPLs, immunoglobulin G class) and total serum IgG, IgM, IgA in children with epilepsy. The effectiveness of immunomodulatory treatments in cases of childhood epilepsy suggests the role of immune mechanisms in the pathogenesis of this disease.

**Methods:** 60 children (34 boys and 26 girls) with newly diagnosed idiopathic generalized tonic-clonic epilepsy, average age 2.1 years (range 0.1-4.2 years) were recruited. The control group consists of 70 healthy subjects, average age 2.4 years. Antiphospholipid antibodies (aPLs, immunoglobulin G class) and total serum immunoglobulins (IgM, IgG, IgA) were determined. None of the children had any clinical signs of immune system disorders.

**Results:** In the study group, there was a higher number (16 cases) of aPLs immunoglobulin G class positive subjects (26.6%) compared with controls (4 cases - 5.7%) (p=0.011). The level of IgA was low in 25±4.1% (control 2.3%, p=0.009), the IgM was high in 3.7±3.3% (control 1.1%, p>0.05). IgG was high in 21.3±3.9% (control 2.1%, p<0.05). These changes were common (77-84%) in children with multiple seizure types, often associated with symptomatic etiology, early onset and high frequency of seizures.

**Conclusion:** Changes in serum level of autoantibodies in children with new onset epilepsy were found to be considerable. Even though the significance of these autoantibodies remains unknown, their increased prevalence indicates that immune system mediated mechanisms may have a role in the manifestation of epilepsy in some children, especially in the subgroups of early-onset, high-seizure-frequency, therapy-resistant epilepsy with multiple seizure types.
P2333
THE EFFICACY OF TOPIRAMATE IN TREATMENT OF INFANTILE SPASMS
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Objective: West syndrome and Aicardi syndrome are the most refractory epileptic syndromes in infancy, and many researchers have made great effort to find optimal treatment modalities for these syndromes. We investigated the topiramate (TPM) efficacy in complex treatment of infantile spasms in children with West and Aicardi syndromes.

Methods: 29 children in the age of 1 month till 1 year with the diagnosis of West and Aicardi syndrome with infantile spasms have been surveyed. TPM was added to traditional treatment by AED and was started at a dose of 3-5mg/kg/day (12.5mg/day) with the minimum target dose of 50mg/day and the maximum dose was 12mg/kg/day.

Results: The etiology of these syndromes in 35% of patients was cryptogenic, in 53% symptomatic, and in 12% idiopathic. 30% of patients treated by TPM during the first month became seizure free, 40% had ≥50% reduction of seizures, and 20% did not show considerable changes and 10% had worsening of their spasms. The typical pattern on EEG as hypsarrhythmia normalized in 21% of cases, improved in 13%, persistent hypsarrhythmia in 34% and modified hypsarrhythmia was determined in 32% of patients.

Conclusion: Topiramate has a good effect on the clinical features of West and Aicardi syndromes, but clinical features do not correlate with EEG findings.

P2334
EPILEPSY IN CHROMOSOME ABERRATIONS
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Introduction: Epilepsy is among the most frequent symptoms in many chromosome aberrations (CA). However there are a few literatures referring to the detailed electroclinical features of epilepsy.

Objectives: We retrospectively characterize the clinical and EEG features of epilepsy associated with CA.

Methods: CA was confirmed by karyotyp performed in 12 epileptic children with dysmorphy. All patients have had a clinical and EEG studies and were classified according to the ILAE classification.

Results: CA included trisomy 21 syndrome (n=5); Angelman syndrome (n=2); trisomyX (n=2), Ring 14 syndrome (n=1), Ring 20 syndrome (n=1) and disorders of sex development (n=1). In trisomy 21 syndrome, West syndrome and focal epilepsy were common in early infancy whereas myoclonic epilepsy was found in childhood. In one case hemiclonic seizures were associated with infarction due to Moya-Moya disease. In Angelman syndrome, febrile seizures occurred frequently, the onset of epilepsy was in early childhood and seizure phenotype was multiple. Paroxysmal discharges of the frontal region on EEG were specific. In Ring 20 syndrome, frontal lobe epilepsy was followed by cognitive decline associated with periods of non-convulsive status epilepticus. Ring 14 syndrome and trisomy X were associated with generalized tonic-clonic epilepsy; EEG was not specific. Generalized tonic seizures were observed in disorders of sex development.

Conclusion: Epileptic syndromes are frequent in CA. In some of these syndromes the clinical and EEG anomalies seem to be quite typical. However further studies are needed to understand the mechanism of epilepsy associated with CA.
P2335

CLINICAL CHARACTERISTICS AND PROGNOSIS OF PATIENTS SHOWING PERIODIC LATERALIZED EPILEPTIFORM DISCHARGES

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Purpose: To analyze the etiology, clinical characteristics and prognosis of patients showing periodic lateralized epileptiform discharges (PLEDs) and to compare these results with pre-existing data.

Methods: 28 patients were selected by the results of scalp EEG that contained PLEDs. Etiology, occurrence of seizure or status epilepticus (SE), presence of focal neurological deficit and prognosis at discharge were studied in each patient through chart review. PLEDs were defined as focal or hemispheric, periodic epileptiform discharges (spikes, spike and waves, polyspikes, sharp waves) usually occurring every 0.5 to 2 seconds.

Results: The most common etiology was anoxic encephalopathy (21.4%), others were cerebral infarction (14.3%), infection of central nervous system (CNS) (10.7%), intracranial haemorrhage (10.7%), toxic-metabolic encephalopathy (7.1%) and postinfectious demyelinating disease (3.5%). The remaining 9 patients (32.1%) had no clear etiology. 27 of 28 subjects (96.4%) developed electro-clinical seizures, SE occurred in 14 of 28 patients (50%). The incidence of SE in aspect of each etiology was similar, but all patients with intracranial haemorrhage and toxic-metabolic encephalopathy developed SE. PLEDs were developed during acute stage of illness in 14 of 19 (74%) patients with known etiology and 8 of 28 patients died in the hospital.

Conclusions: Anoxic encephalopathy was the most common cause of PLEDs. Most patients developed electro-clinical seizures and SE occurred in half of these patients. The prognosis of patients with PLEDs was poor in almost all patients in this study. The occurrence of SE and prognosis at discharge were significantly correlated with the cause of PLEDs, respectively.

P2336

SILENT STROKES ARE A RISK FOR EPILEPSY IN THE ELDERLY POPULATION

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Purpose: To show the significance of silent cerebral infarctions (SCIs) among middle age and elderly epileptic patients.

Methods: This cross-sectional study (survey) was carried out at Rizgary Teaching Hospital, Erbil, Iraq from January to May, 2010. Patients were included in this study if they were middle aged and elderly patients (age range 50 and above) having unprovoked acquired first seizures or multiple seizures, and having history of recent or old strokes or TIA and now presented with seizures. 100 Iraqi patients were included in this survey. The MRI images were examined and interpreted through collaborative discussions between a consultant radiologist and a consultant neurologist and almost all patients had abnormal EEG studies.

Key findings: In this study males outnumbered females and p-value was not significant regarding sex differences in the studied sample; late onset epilepsy was mostly observed within the age group (70-79years). SCIs were observed mostly in elderly population (63-67%). Hypertension, hyperlipidemia, smoking, and old strokes are the commonest comorbidities observed in relation to epileptic patients with SCIs, and partial secondary generalized epilepsy type was the commonest epilepsy variety observed (73%) followed by partial complex epilepsy (12%) and simple partial epilepsy (11%).

Conclusion: SCIs were common in elderly patients having epilepsy (18% in association with major stroke and 35% as sole radiological finding), especially patients having stroke risk factors like hypertension, and its prevalence increase with age. SCIs can be an indirect way to establish the causes of epilepsy in the elderly population as having silent cortical ischemia.
P2337

EXPRESSION OF GEYPHRIN IN PATIENTS AND A RAT MODEL OF TEMPORAL LOBE EPILEPSY

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Gephyrin is a peripheral membrane protein that functions to anchor gamma-aminobutyric acid type A receptors (GABA(A)R) and glycine receptors (GlyR) at postsynaptic sites on central neurons. Previous studies have shown that alteration in GABA-mediated inhibition contributes to the pathophysiology of temporal lobe epilepsy (TLE), and gephyrin has a close correlation with different GABA(A) receptor subunits; so we investigated the expression of gephyrin in the hippocampus of patients with TLE and of experimental temporal lobe epilepsy rats to explore the relationship between gephyrin and TLE. Using immunohistochemistry, gephyrin expression was detected in 30 surgical samples of patients with TLE. Using immunohistochemistry and Western-blot, we also observed gephyrin expression during the entire epileptic process in a rat model of temporal lobe epilepsy. We found that gephyrin has an abnormal expression in patients with TLE, and in rat models, the expression of gephyrin has a dynamic change during different phases of the epileptic process. Our findings suggest that gephyrin might possibly play a role in temporal lobe epilepsy.

P2338

SPECTRUM OF SURGICAL COMPLICATIONS OF EPILEPSY SURGERY: A SINGLE-CENTER STUDY

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Background: Although surgery is the most effective means of eliminating or reducing seizures in cases of medically refractory epilepsy, expected or unexpected surgical complications must also be borne in mind in order not to decrease patients’ quality of life. The aim of this present study was to assess the surgical complications of epilepsy surgery and their effects on the disease course in patients with intractable epilepsy arising from the temporo-mesial structures.

Methods: Records of 58 patients who underwent temporal lobectomy and/or selective amygdala-hippocampectomy in Gülhane Military Medical Academy between January 2000 and August 2010 were reviewed for peri- and post-surgical complications.

Findings: Post-surgical complications were detected in 7 patients (12%). The most common complication of ES was infection in 2 patients (2.9%). Other complications were hemorrhagic infarction, paresis of the frontal branch of the left facial nerve, subdural effusion and late-onset psychosis, anxiety disorder and depressive disorder.

Conclusions: The results of our study suggest the importance of post-operative care and long-term follow-up in order to achieve favourable seizure outcome after epilepsy surgery.
P2339

COMPARISON OF ZONISAMIDE VERSUS LEVATIRACETAM AS AN ADD ON THERAPY IN PARTIAL EPILEPTIC PATIENTS ON CARBAMAZEPINE TREATMENT

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Objective: The purpose of this study is to compare the efficacy and adverse effects of zonisamide versus levetiracetam as a second line treatment in patients with partial epilepsy who are on carbamazepine treatment.

Background: Monotherapy with antiepileptic drugs is successful only in half of the partial epileptic patients. Many new antiepileptic drugs are developed to attain seizure control. Carbamazepine is one of the classical drugs for partial epileptic patients. Zonisamide and levetiracetam are developed for partial epilepsy in the recent years as an add-on therapy. The current study is planned to compare these two drugs in partial epileptic patients who are on carbamazepine without complete seizure control.

Method: 35 partial epileptic patients between ages 18 and 55 on carbamazepine therapy with optimal dose for one year and who had at least one seizure in the last 3 months were included in the study. These patients were randomized into two groups. The first group of patients received zonisamide and the second group received levetiracetam. Each drug was titrated slowly to 2000mg/day for levetiracetam and 400mg/day for zonisamide in the first three months of the study. Each group was followed for one year.

Results: Both drugs reduced seizures to statistically significant levels compared to the monotherapy period (p<0.001 for both groups). No statistical differences can be found within the two groups. Both add on drugs have no effect on carbamazepine blood levels.

Conclusion: The results of this comparative study revealed that both drugs are equally effective in seizure control as well as without serious side effects as an add-on therapy in partial epileptic patients.

P2340

IS THERE A LINK BETWEEN IQ AND PREVALENCE OF EPILEPSY IN LEARNING DISABILITY PATIENTS IN FORENSIC SETTINGS?

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Context: The frequency of epilepsy in people with learning disability is higher than in the general population as a whole. The likelihood of developing epilepsy is lowest (5-7%) in people with mild learning disabilities and no other condition, rising to about 75% in people with severe learning disabilities and additional disabilities such as cerebral palsy (Beavis et al 2007).

Objectives: The primary aim of this study was to investigate a possible relationship between the severity of learning disability and prevalence of epilepsy amongst patients in a forensic setting.

Methodology: Retrospective data were collected for 37 inpatients in our unit from their clinical notes, assessment reports and clinical interviews. All subjects included in the study were males - 84% were Caucasians, 13% were Afro-Caribbean and 3% were Asian. The mean age of subjects was 32.5 years (range: 23 - 51 years) and the mean IQ of all subjects was 61.35 (Range: 48 - 70).

Results: The results revealed the prevalence of epilepsy in our sample to be 35.13% which is higher than the prevalence in the general population. Secondly, the mean IQ of subjects with epilepsy (56.5) was lower than the subjects having no epilepsy (64).

Conclusions: The results are suggestive of the fact that people suffering from epilepsy have a lower IQ than those who are not. The results also generate a hypothesis that both learning disability and epilepsy may be outward manifestations of common or linked underlying brain damage or dysfunction. This should be a subject of exploration in future studies.
**P2341**

**NEUROPSYCHOLOGICAL PROFILE OF CHILDREN WITH ABSENCE SEIZURES WITH VALPROIC ACID TREATMENT**

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**Objective:** The aim of this study is to analyze the neuropsychological profile of children with absence seizures treated with valproate

**Methods:** 45 children (7 to 12 years) (20 with absence seizures treated with valproate and 25 controls). We get the neuropsychological profile by applying the WISC-R (Wechsler Intelligence Scale for Children-Revised) and Battery Luria-DNI.

**Results:**

a) Children with absence seizures manifest verbal and total IQ significantly lower (p<0.05) but within normal compared to the control group. The neuropsychological profile Luria-DNI is significantly lower (p<0.05) than in the control group in all areas except in regulation verbal, kinaesthetic, visual perception, comprehension and understanding simple grammar. This is a serious deterioration profile in the areas of logical memory, short-term memory, arithmetic, numerical structure, reading, writing, naming, and articulation.

b) Children with absence seizures have a significant memory deficit. Memory profile appears generally deteriorated when compared with the control group (p<0.001) although there is a paradoxical preservation of shape memory.

c) The short-term auditory and visual memory and logical memory are particularly affected.

d) In the epileptic group, the attentional profile (estimated by the "third factor of the WISC-R") is generally deteriorated when compared with the control group.

e) The time of valproic treatment does not affect the neuropsychological profile, however, age at onset of the first crisis negatively affects the ability for arithmetic, writing, and spatial orientation.

**Conclusions:** We consider in children with this diagnosis and treatment, the neuropsychological profile described to strengthen deficient neuropsychological and psychoeducational areas

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**P2342**

**THE CLINICAL CASE OF EPILEPSIA PARTIALIS CONTINUA AFTER TICK-BORNE ENCEPHALITIS**

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The Kozhevnikov epilepsy is one of the clinical forms of chronic tick-borne encephalitis (TBE) which can develop in any age, but mostly in young patients. With the aim of demonstrating the typical progression of neurological disorders after acute TBE, we present the following clinical case. The patient Z.D. was born on 11.12.05. Three months later after acute meningoencephalitis caused by serologically confirmed TBE there appeared hyperkinesia and ictuses restarted and appearance of a new type of them (oromandibular myoclonus with secondary generalization). Hyperkinesia periodically amplifies transferring into focal and secondary generalized ictuses. Muscular groups involved in hyperkinesia are in a condition of slowly progressing mixed paralysis. The epileptic activity as sharp-slow complexes in fronto-temporal brain parts with negative myocloni was detected by EEG video monitoring. A tomography did not show any destruction in the brain. Six months after acute TBE, the myoclonic hyperkinesias in the tongue, facial muscles, arms and fingers with periodical negative myocloni appeared and were resistant to therapy. The presented case shows the progressing damage of central nervous system following a suffered acute TBE. This clinical manifestation corresponds to our understanding of the «special kind of epilepsia partialis continua», described by Kozhevnikov in 1894. In cases of development of similar semiology after confirmed TBE in endemic areas, chronic TBE is the main point which should be considered in the course of differential diagnostics.
P2343

THE YIELD, RATIONAL USE AND COST-EFFECTIVENESS OF ROUTINE EEG AFTER A FIRST SEIZURE: RE-AUDIT OF 100 CASES

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Introduction: Routine-EEG continues to play a central role in the diagnosis and management of patients with seizure disorders. Its rational use should be guided by and interpreted in the light of the clinical history.

Aim: To evaluate the yield to optimize the use and cost-effectiveness of routine-EEG after a first seizure.

Material and methods: 100 case notes were reviewed between Aug 2010 and Feb 2011 at The Walton Centre. The population included 49 female and 51 male patients 16-year-old and older. The referral source, clinical history, EEG results and final diagnoses were reviewed.

Results: Suspected diagnoses prior to EEG included Idiopathic Generalized Epilepsy (IGE) 16/100, Partial Epilepsy 24/100, GTCS 15/100, syncope 6/100, pseudo-seizures 8/100, alcohol-related-seizures 2/100, and “blackouts” 29/100. EEG findings were consistent with IGE in 9/100, focal epileptiform activity 8/100, non-specific abnormalities in 6/100 and NORMAL in 77/100 (including 2/100 captured pseudo-seizures). Final diagnoses included IGE 11/100, cryptogenic generalized epilepsy in 3/100, localization-related epilepsy 12/100, undetermined epilepsy 9/100, isolated seizure 6/100, pseudo-seizures in 12/100, syncope 9/100, alcohol induced 4/100, migraine 2/100, unspecified or unclear diagnosis (e.g. “blackouts” 32/100.

Conclusions: Routine-EEG should be used to support a diagnosis of epilepsy when the clinical history suggests that the event is presumed to be epileptic. It is particularly useful in young adults with suspected IGE, whilst it is largely unhelpful in assessing “blackouts” and/or in the differential diagnosis of epilepsy, except in well-selected pseudo-seizures. The term blackout is confusing and should be avoided by clinicians. Routine-EEG is not useful and is therefore contraindicated in syn coces.

P2344

EFFECT OF LEVETIRACETAM (EPIXX) IN ADJUNCTIVE THERAPY OF MOOD AND COGNITION IN EPILEPTIC SEIZURES AFTER VIRAL ENCEPHALITIS

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Background: Levetiracetam is applied as adjunctive therapy in adult patients with partial seizures. Levetiracetam also reveals the neuroprotective effect in some animal models and may provide the unique mood-stabilizing effect different from other antiepileptic agents used for their mood-stabilizing properties.

Aim: To detect the neuroprotective effect of levetiracetam on mood and cognition in patients with partial seizures after viral encephalitis as compared to treatment with another antiepileptic drug complex.

Patients and methods: 19 patients with epilepsy after viral encephalitis were investigated. Patients were divided into 2 groups: 1st group (9 patients) received antiepileptic drug complex with levetiracetam (EPIXX, Abdi Ibrahim, Turkey) and the 2nd group (10 patients) received antiepileptic drug complex without levetiracetam. Mood was assessed with the Hamilton depression and Anxiety rating scale. Cognitive assessment was performed using the neuropsychological battery tests, including auditory verbal learning, attention and executive functioning with Stroop colour and word test at baseline and 1-1.5 months later as well as serial EEG.

Results: No differences were found between the two groups with regard to depression (p<0.5), but anxiety symptoms were significantly lower in the 1st group than in the 2nd group (p<0.05). Cognitive assessment revealed that executive function, memory and attention were non-significantly higher in the 1st group compared to 2nd group (p<0.07). Significant positive effect on the EEG were found in the 1st group (p<0.01).

Conclusion: Levetiracetam showed positive effects on the cognition and EEG in epileptic patients after viral encephalitis in comparison with other drug complexes.
P2345

COGNITIVE AND BEHAVIOURAL PROBLEMS IN PATIENTS WITH EPILEPSY: A PILOT STUDY

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Introduction: Epilepsy is a common disorder characterized by repeated occurrence of unprovoked epileptic seizures. Mental disorders occur more frequently in patients with epilepsy than in the general population. The aim of this study was to map the occurrence of selected symptoms of cognitive and behavioural or personality component in patients with epilepsy.

Patients and methods: 26 patients (18 males, mean age 44.6±14.9 years; 8 females, mean age 36.0±13.8 years) with epilepsy were included. In all patients, complex psychological examination was performed and Minnesota multiphase personality inventory MMPI-2 was administered during hospitalization for the assessment of current mental state and personality characteristics. Acquired data were compared to data known from standardization group, consisting of 650 persons. t-test was used for the statistical evaluation.

Results: In patients with epilepsy, significantly higher proportion of symptoms in the scales of hypochondria, depression, conversion hysteria, psychasthenia, schizophrenia, hypomania, and social introversion was found when compared to the members of the MMPI-2 Inventory standardization group (p<0.01 in all cases).

Conclusion: Adequate diagnosis, differential diagnosis and treatment of psychic disorders in patients with epilepsy are similarly important for their quality of life as the compensation of epileptic seizures.

P2346

DIAGNOSTIC VALUE OF EEG IN EPILEPSY AND OTHER LOSS-OF-CONSCIOUSNESS CONDITIONS FOR QUALIFICATION TO DRIVE MOTOR VEHICLES

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Introduction: Epileptic seizures and other conditions involving sudden loss of consciousness prevent, in part or completely, subject's suitability for performing certain occupational tasks. Due to their widely different aetiology, these seizures and conditions pose a serious diagnostic and certification problem.

Objective: This work analyses current diagnostic and certification problems and the procedures used to determine drivers' qualification to run motor vehicles in public roads.

Patients and methods: The studied group comprised 42 men (mean age 35 years, SD 10.8) with loss-of-consciousness conditions. Neurological examination and EEG with 3-min hyperventilation, followed by rhythmical flash activation, were performed.

Results: Epilepsy was the major cause of disturbed consciousness among the studied group: it was diagnosed in 28 (66.7%) cases. Character of the seizures, their frequency, circumstances in which they appeared, results of neurological and EEG tests, results of neuroimaging tests were taken into account when diagnosing clinical epilepsy. Syncope conditions resulting from peripheral circulatory failure were detected in 4 (11.4%) patients. Cardiac disorders constituted the cause of sporadic loss-of-consciousness conditions in 4 (11.4%) patients. There were no pathologic changes in EEG. Drivers with consciousness disorders of ambiguous origin constituted the most difficult diagnostic problem.

Conclusions: EEG allows differentiating between epileptic and non-epileptic seizures. Findings of the pathological changes in EEG together with clinical symptoms may indicate any not diagnosed disease, necessity of other diagnostic tests, medical treatment and disqualification to drive motor vehicles.
P2347
ANGINAL PAIN AS EPILEPTIC AURA MANIFESTATION
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We present a case report of an 58-year-old woman who has
epilepsy with partial complex seizures with an unusual aura
presented as chest pain like angina pectoris. At the age of 19
the patient started to have symptoms which retrospectively
can be regarded as epileptic manifestations: on occasions
she felt strange, she heard a tone of high frequency and of
increasing intensity and she lost full consciousness. Later,
at the age of 40 there was a change regarding the aura which
now also included “anginal pain” with radiation to both
arms. These manifestations occurred during stress and led
twice to generalized tonic clonic seizures. Electro ence-
phalography, both conventional and under sleep deprivation,
and magnetic resonance imaging of the brain were normal.
Electrocardiography and cardiac stress test were normal
without any signs of myocardial ischemia. “Anginal pain”
was characterized as Prinzmetal angina but did not fully
respond to nitrates. As a matter of fact, it responded very
well to anticonvulsant medication, as strange feeling,
acoustic tone and unconsciousness did. This is one of very
few cases with cardiac manifestations of complex partial
seizures described in literature and represents an
underdiagnosed but treatable disorder.

P2348
CUTIS VERTICIS GYRATA, MENTAL RETARDATION AND EPILEPSY: A CASE REPORT
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Introduction: Cutis verticis gyrata (CVG) is an abnormality
of the scalp characterized by the formation of furrows and
folds which cannot be flattened by traction or pressure.
Primary and secondary forms of CVG have been described.
We report one case of a patient affected by cutis verticis
gyrata, mental regression and epilepsy.

Observation: A 24-year-old woman was born after regular
gestation and delivery from non-consanguineous parents.
Her family history was unremarkable. The psychomotor
development was normal until the age of 14. At this age,
tonic and clonic seizures appeared with progressive
intellectual regression observed. Clinical examination
showed tetrapyramidal syndrome and bilateral cutaneous
foldings were noted in the parietal and occipital regions in
an anteroposterior direction. On electroencephalography,
diffuse spike-wave elements were noted. MRI showed
diffuse brain atrophy and an abnormal thickening of the
skin and connective tissue. Biopsy of skin and serum
hormonal levels were normal. The patient was treated with
Valproate (1500 mg/day) and seizure free.

Conclusion: The etiology of primary CVG remains
unknown as does its relation with epilepsy in this case.
PRE-SURGICAL LOCALIZATION OF EPILEPTIC FOCI IN TEMPORAL LOBE EPILEPSY COMPLICATING WITH DEPRESSIVE DISORDERS AND 3 YEARS OF FOLLOW-UP

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Objective: To evaluate the values of video-EEG, MRI and FDG-PET in the localization of epileptic foci in temporal lobe epilepsy complicating with depressive disorders and to discuss the relationship between improvements in depressive disorders and localization of surgery.

Methods: Pre-surgical examinations of video-EEG, MRI and FDG-PET of 60 patients were analyzed. The values of video-EEG, MRI and FDG-PET in the pre-surgical evaluation in temporal lobe epilepsy were compared based on the postsurgical results of seizure control. The parameters mainly including HAMA, HAMD and ADL were observed and analyzed pre- and post-surgical in order to discuss the effects of surgery for depressive disorders.

Results:
1) MRI was able to distinguish normal brain structure from lesions. Patients with hippocampal sclerosis in MRI demonstrated a good seizure control after surgery. The sensitivity of interictal PET was higher than MRI for the localization of temporal lobe epilepsy. Usually the area of hypometabolism in PET was larger than the epileptic foci.
2) In all patients who underwent surgery, HAMD was improved significantly compared to that of pre-surgery (p<0.05) Surprisingly, it is important that HAMD in patients with epileptic foci in left temporal lobe and hippocampus is higher than in those with epileptic foci in right temporal lobe and hippocampus (p<0.001).

Conclusions:
1) Combination of video-EEG, PET and MRI improved the accuracy of localization of epileptic foci and reduced the need of intracranial recording.
2) Incision of the epileptic foci not only accurately controlled the seizures, but also improved the symptoms of the depressive disorders.

RUFINAMIDE COULD BE A SECOND LINE FOR THE ADJUNCTIVE TREATMENT OF PARTIAL SEIZURES IN ADULTS

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Objective: Rufinamide is a triazole derivative, a novel antiepileptic drug (AED) which has been found to be effective in the treatment of drop attacks and partial seizures associated to Lennox-Gastaut Syndrome. Nevertheless efficacy of Rufinamide was demonstrated in five randomized placebo-controlled trials in patients with partial seizures. The aim of the study was to explore the efficacy of rufinamide as a second line adjunctive treatment of partial seizures in adults with focal epilepsy. We aimed to describe a group of 50 patients with focal epilepsy who showed drug resistance to classic second line antiepileptic drugs.

Methods: We describe 50 adult patients (mean age 14.5) with focal epilepsy, who developed drug resistant epilepsy. Initial dosage and titration of Rufinamide was at discretion of epileptologist according to medical need and considering changes in the pharmacokinetics associated to concomitants AED. Efficacy was evaluated by comparing the frequency of countable seizures at baseline (4 weeks before add-on of Rufinamide) with the frequency in the last 8 weeks of observation.

Results: 35/50 patients were responders. Patients experienced more than 65% seizure reduction.

Conclusions: Our sample, although small, was selected basing on epilepsy resistance to two first line AED drugs. This data address us to puzzle that Rufinamide used as off-label treatment in not severely affected drug-resistant epilepsy showed higher responder rate, ranging from 25 to 65% of seizures reduction. Further studies are required to clearly define a patient population that could benefit from Rufinamide.
THE PROPORTION OF THE EPILEPTIC AND NON-EPILEPTIC PAROXYSMAL STATES IN PATIENTS ADMITTED TO HOSPITAL WITH A DIAGNOSIS OF UNCERTAIN SEIZURE DISORDERS
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Introduction: From a neurologist’s point of view, the differentiation between the seizures of epileptic and the seizures of non-epileptic genesis is the most important in the diagnosis of uncertain seizure disorders. The differential diagnosis of the epileptic and non-epileptic seizures is very difficult in some cases.

Material and methods: The authors have retrospectively analysed the representation of the epileptic and non-epileptic paroxysmal states in 420 in-patients at the 1st Department of Neurology in Bratislava with the admission diagnosis of unconsciousness of unknown aetiology and might-be epilepsy. In the framework of this group, the percent proportion of the epileptic and non-epileptic paroxysmal states was assessed. The share of the particular diagnosis in non-epileptic seizure disorders was also assessed.

Results: After a comprehensive diagnostic analysis, the diagnosis of non-epileptic paroxysmal states was established in 218 patients (51.9%), the diagnosis of the solitary epileptic seizure or epilepsy in 182 patients (43.34%). The diagnosis of a combination of the epileptic and non-epileptic paroxysmal states was assessed in 20 cases (4.76%). Within the non-epileptic paroxysmal diagnosis, the diagnosis of syncope was the most frequent - 154 patients (36.67%).

Conclusion: Obtained results point out to a need for an “extensive” capability to carry out the differential diagnosis in neurologist’s practise in the field of medicine, as well as a need for further education in other areas of medicine (general medicine, psychiatry).

EFFECT OF ANTI EPILEPTIC DRUGS ON PLASMA LIPIDS AND LIVER FUNCTION TESTS IN CHILDREN WITH EPILEPSY
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Aims: Alteration in serum lipids leads to atherosclerosis. Atherosclerotic cardiovascular disease, which results in ischemic heart disease, is the leading cause of death in adults. Antiepileptic drugs, especially carbamazepine, alter serum lipids. In this study we checked serum lipids in epileptic children under monotherapy.

Methods: Serum lipid profile changes were investigated in 53 children aged 2-14 years receiving sodium valproate (n=31), carbamazepine(n=14), and Phenobarbital (n=8) for their newly diagnosed seizure disorder. Serum lipids and liver enzymes were measured at enrolment and after 3 months of treatment. Detailed history was taken.

Results: Serum total cholesterol, total cholesterol/ HDL, and SGOT increased after 3 months of treatment with sodium valproate. Serum total cholesterol, low-density lipoprotein, high-density lipoprotein, triglyceride, and SGPT increased after 3 months of treatment with carbamazepine. Serum total cholesterol, triglyceride, cholesterol total/ HDL, and SGPT increased after 3 months of treatment with Phenobarbital.

Conclusion: Antiepileptic drugs increase levels of lipids that increase the risk of atherosclerosis so serum lipid profiles should be carefully monitored in children receiving enzymes inducing antiepileptic drugs.
**P2353**  
MODIFICATIONS IN LOCAL HEMODYNAMIC PRECEDE EPILEPTIC SPIKE: SIMULTANEOUS EEG AND NEAR INFRARED SPECTROSCOPY ANALYSIS IN RATS AND CHILDREN  
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**Objective:** NIRS, a recently developed technique for haemodynamic studies suitable for dynamic recordings, have an excellent temporal resolution and measures changes in the concentrations of both oxy-, deoxy-haemoglobin in tissues. We evaluate combined EEG-NIRS recordings in rats, and in some children to get further insight in the relationship between spikes and the haemodynamism.  

**Method:** On urethane anaesthetized rats, ECoG electrodes, light sources and detectors were inserted bilaterally. The epileptic spikes were induced by local application of bicuculline methiodide to the cortex. The ECoG and NIRS data were recorded simultaneously. The time of the spike peak was used for averaging ECoG and NIRS Data. A grand average was performed between the different rats. In epileptic children with partial epilepsy and spontaneous focal discharges the procedure of analysis was similar.  

**Results:** The hemodynamic changes precede the epileptic spike in all rats. The "initial dip" in oxygenated (HbO) and total (HbT) haemoglobin occurred before the spike onset and was followed by post-spike increasing in the HbO/HbT. In children, a focal increase in HbO and a small increase in Hbr were observed in the area of the spikes.  

**Conclusion:** In rats, we demonstrate hemodynamic changes which precede the onset of spike activity. Such hemodynamic modulation has other than highly synchronized pyramidal cell origin. Glial cells, non synchronized activities or low level synchronized activities are likely to participate in this early hemodynamic modulation tightly associated with the mechanism of spike onset. In children changes in HbO and HbR are focal and predominate after the spikes.

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**P2355**  
ULTRA-LOW DOSE NALTREXONE POTENTIATES THE ANTI-CONVULSANT EFFECT OF TRAMADOL ON CLONIC SEIZURE IN MICE  
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**P2356**  
ASTROCYTE DYSFUNCTION IN EPILEPSY  
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**P2357**  
NEURON-SPECIFIC ENOLASE IN THE BLOOD SERUM AS A DIAGNOSTIC MARKER OF EPILEPSY  
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**P2358**  
MAGNETIC STIMULATION SIMULATION IN EPILEPTIC BRAIN  
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**P2359**  
CLINICAL PECULIARITIES OF POST-STROKE EPILEPSY  
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**P2360**  
TRANSIENT EPILEPTIC ATTACKS IN PATIENTS WITH VERTEBROBASILAR INSUFFICIENCY  
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P2361
EPILEPSY IN PATIENTS WITH CEREBRAL CAVERNOUS MALFORMATIONS
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P2362
SEIZURES CAUSED BY ELECTROMAGNETIC POLLUTION: A CASE REPORT
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P2363
ELDERLY AND EPILEPSY
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P2364
THE TREATMENT GAP OF ACTIVE CONVULSIVE EPILEPSY IN RURAL WEST CHINA
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P2365
PATIENTS' KNOWLEDGE OF THEIR DISORDER: PERSPECTIVES OF PATIENTS WITH EPILEPSY ATTENDING A TERTIARY HEALTH FACILITY IN SOUTHWESTERN NIGERIA
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P2366
ACUTE SYMPTOMATIC EPILEPTIC SEIZURES IN PATIENTS WITH CEREBROVASCULAR DISEASES
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P2367
DATA OF NEUROPHYSIOLOGIC STATE AND QUALITY OF AUTONOMIC REGULATION IN PATIENTS WITH EPILEPSY AND PANIC ATTACKS
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P2368
POST-STROKE EPILEPSY
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