Epilepsy 2

EP3123

An inventory on deceased infantile spasms patients

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\textbf{Introduction:} The premature death rate for patients with Infantile Spasms (IS) ranges from 5-31%. Nearly a third of the deaths are reported to be before age 3 and 61% occurred at/or before age 10 years.

\textbf{Methods:} Among a total of 210 patients seen at least once in our IS out-patient clinic of neurology department, in Cerrahpaşa Medical Faculty, data of a total of 37 patients with premature death are examined. Personal and familial medical information, birth history, type of spasms, age at onset of spasms, presence of partial seizures, video-EEG characteristics and cranial MRI findings (cMRI) are evaluated.

\textbf{Results:} Male to female ratio was 23/14. Sixteen pairs of parents of 37 patients (43%) were consanguinous. Follow-up time was 2 months-12 years. Age of death ranged between 7 months and 9 years. Thirty-six patients (97%) had pre-morbid developmental delay. All patients had symptomatic IS. Perinatal asfixia was the most frequent condition among the antecedent events with a rate of 19/37 (51%). Most frequent cMRI findings were diffuse cortical-subcortical atrophy in 13 patients (35%) and extensive subcortical involvement in 5 patients (14%). Specific reason for death could be detected in only 9 patients, 6 of which happened during respiratory tract infections.

\textbf{Conclusions:} The most severe cases resulting with premature death among patients with IS are found to be associated with symptomatic etiology and with extensive cortical and subcortical lesions. High incidence of death during respiratory infections should warn the clinician to be cautious about immune incompetency in those cases.

\textbf{Disclosure:} Nothing to disclose

EP3124

Antiepileptic drugs and apolipoproteins: toward an assessment of vascular risk

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\textbf{Introduction:} The use of antiepileptic drugs is highly prevalent, often chronic, with frequent polytherapy and usually aiming to an overall young population. Nonetheless, epilepsy has been associated with an increased overall vascular risk, including stroke. Furthermore, commonly used drugs, such as valproate and carbamazepine, may alter certain markers of vascular risk. This study aims to evaluate their effect on plasma apolipoproteins as markers of vascular risk.

\textbf{Methods:} We selected ninety-four patients without major known vascular risks, nor nutritional or metabolic abnormalities, from our hospital 2012 outpatient epilepsy list. Clinical and analytical data was obtained from electronic medical records based on apolipoproteins assay (N=264). SPSS Statistics 20 (IBM, 2011) was used for statistical analysis according to data characteristics and an alpha level of 0.05.

\textbf{Results:} Compared to other treatments, taking carbamazepine was associated with higher levels of apolipoprotein A-I (U=837.5, p=0.044, r=0.21), particularly among women [t(59)=−2.421; p=0.019; r=0.30], while taking valproate was associated with lower levels (U=805; p=0.024; r=0.23). Accordingly, taking carbamazepine was associated with higher apolipoprotein A-I compared to taking valproate (U=423; p=0.017; r=0.28), also among women [t(44)=2.721; p=0.009; r=0.37]. Though some drug overlapping was observed, no statistically significant positive associations (\(p>0.05\)) were found.

\textbf{Conclusions:} The results concord with previous studies and suggest a potential effect of commonly used antiepileptic drugs on vascular risk among young and otherwise overall healthy adults. Proper clinical studies may provide better insight on this matter and yield guidelines for vascular protection.

\textbf{Disclosure:} Nothing to disclose
EP3125
Etiology of “refractory epilepsies” cases in the long term video-EEG monitoring (LTM) unit
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Introduction: Refractory epilepsy constitutes for approximately 30% of all cases of epilepsy. Most cases are associated with structural lesion of the brain, and should be regarded as candidates for surgical treatment. Patient with refractory epilepsy should undergo complex evaluation in order to find out the underlying cause of epilepsy. We present analysis of etiology of the 91 cases of “refractory epilepsy” referred to long term video-EEG monitoring unit within 6 months.

Methods: All of the patients underwent long term video-EEG monitoring, clinical and neuropsychological evaluation as well as epilepsy devoted MRI protocol. The classification of the epilepsies were done according to the ILAE recommendations.

Results: 31 patients (34%) admitted to the LTM unit have had non-epileptic seizures from which 13 cases (14%) were diagnosed as PNES (psychogenic non-epileptic seizures), 18 patients have had other paroxysmal events. Of the 60 cases of the epilepsy 12 (20%) were classified as primary generalized epilepsies probably of genetic or unknown etiology. 48 cases of epilepsies have had seizures with focal semiology. 17 (35.4%) cases of epilepsies with focal seizures semiology were MRI negative. In 31 (64.5%) cases the underlying structural lesion was found.

Conclusions: Despite the progress in the diagnostic process of epilepsy there are still approximately one third of misdiagnosed cases of “refractory epilepsy”. Our data suggest that all patients with “refractory epilepsy” should undergo thorough complex evaluation for the exclusion of epilepsy and in order to indentify possible candidates for the epilepsy surgery.

Disclosure: Nothing to disclose

EP3126
Prescribing patterns of antiepileptic drugs and interaction risk in general practice
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Introduction: The aims of this study were: to analyze the prescribing pattern of newer and older antiepileptic drugs (AEDs); to assess the exposure to potential drug-interactions in a general practice setting.

Methods: On a population of 150,000 individuals we identified patients who received AED prescriptions during 2005-2011. One-year prevalence and incidence of use and global AEDs consumption were calculated. The risk of drug interactions was calculated as overlapping days between the exposition days of AEDs and interacting drugs.

Results: Prevalence of older AED use slightly increased during the study period, while a strong increase of newer AED use was observed until 2006, followed by a deep fall in 2011. Among older AEDs, phenobarbital and valproate were the most widely used in 2011, accounting for 21.2% and 16.2% of total AED consumption. In the same year, oxcarbazepine and lamotrigine were the most used new AEDs (10.9% and 10.8% respectively), while gabapentin and pregabalin exhibited the higher incidence of use. The main indication of use was epileptic disorders for older AEDs and neuropathic pain for newer AEDs. A high number of patients treated with older AEDs, received co-prescription at clinically relevant interaction risk. Among newer AEDs, topiramate showed the highest annual rate of possible interactions.

Conclusion: Significant differences were shown in the prescribing pattern of newer and older AEDs. A not negligible patients exposition to potential clinically relevant drug-interactions was shown. The co-prescription of drugs at risk of interaction with AEDs should be evaluated with caution or avoided, if possible.

Disclosure: Nothing to disclose
Ictal extrapyramidal motor symptoms in temporal lobe epilepsy

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Introduction: The basal ganglia form circuits with the frontal and temporal neocortices. Dystonic limb posturing and gyration movements are established ictal extrapyramidal motor symptoms (EPMS). Order and duration of new ictal EPMS were investigated to elucidate seizure propagation pathways in frontal- (FLE) and temporal lobe epilepsy (TLE).

Methods: Videos of 38 patients with medically refractory TLE or FLE referred to the epilepsy monitoring unit at the Department of Neurology, Medical University of Innsbruck between 01.01.2001 and 01.08.2002 were analysed for the ictal EPMS dystonia with tremor and tonic extension after figure-4-sign (TEAF4).

Results: An aura preceded more often TLE than FLE seizures (p=0.000). Dystonia (p=0.002) or seizure propagation from dystonia to version (p=0.038) were predominantly observed in seizures with temporal lobe origin. Forced blinking (p=0.034) and making a grimace (p=0.002) were exclusively documented in seizures with frontal lobe origin. An immobile limb (p=0.028), dystonia with tremor (p=0.012) and TEAF4 (p=0.014) were exclusively documented in seizures with temporal lobe origin. Preferred seizure propagation pathways exclusively documented in seizures with temporal lobe origin were aura to head turn (p=0.028) or dystonia to a generalized seizure (p=0.005).

Conclusions: Ictal dystonia, tremor and TEAF4 were exclusively documented in our TLE subgroup. The basal ganglia seem to be an important propagation pathway as documented by the different semiological signs following dystonia in TLE, but not in FLE.

More prospective studies are required to elucidate basal ganglia involvement in seizure propagation pathways and establish ictal EPMS as semiological signs with distinct localizing value.

Disclosure: Nothing to disclose

Analysis of gene expression NRN1 in patients with epilepsy with aCGH microarray DNA methods

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Introduction: This work includes comparing the level of gene expression NRN 1 in patients with epilepsy N=30 (10 with temporal lobe, 10 with frontal lobe and 10 with idiopathic epilepsy) and control group (patients with no clinical history of seizures) N=30. The NRN1, neuritin 1 gene encodes neuritin-1, a GPI-anchored neuronal protein that functions extracellularly to modulate neurite outgrowth.

Methods: The study group consisted of 30 patients with diagnosis of epilepsy (10 with temporal lobe, 10 with frontal lobe and 10 with idiopathic epilepsy). The control group were patients matched for sex and age, with no clinical history of epilepsy, not taking antiepileptic drugs. The material consisted of peripheral blood lymphocytes. From lymphocytes was isolated the genetic material. RNA was extracted and hybridized to the array and RT-PCR. The method, that we used was cDNA microarrays type “Human Whole Genome DNA Microarray” by Biote21 AGILENT ALL HUMAN FEATURES. NIA Analysis Software were used. Hierarchical-clustering gene selection was made centered correlation (distance measure and single linkage). Using the method of TR-PCR we have confirmed the result for the genes with the largest increase or decrease of the transcript in the study group versus control group.

Results: We received increased expression in all groups (all groups vs. control group 10,006 times) and most hyperexpression (12,707 times) in the temporal lobe epilepsy group. FDR=0.2763.

Conclusions: Statistically significant hyperexpression gene NRN 1 in all groups of epilepsies.

The largest hyper expression in temporal lobe epilepsy group.

Disclosure: Nothing to disclose
EP3129

Stigma scale of epilepsy

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Objective: To draw attention to this common psychosocial problem associated with epilepsy which is stigmatization. We aimed to present results of stigma scale of epilepsy (Dr. Li Li Min and colleagues’ scale from Brazil).

Methods: The subjects were divided in three groups,
1- Patients from the epilepsy Outpatients Clinic of the Şişli Hamidiye Etfal Education and Resource Hospital.
2- Patients’ families.
3- People in community.
The Stigma Scale of Epilepsy (SSE) contains five questions with 24 items, each with a four-point scale: 1 not at all, 2 a little, 3 a lot, 4 totally. In addition, the Beck Depression Scale (BDS), Hamilton Anxiety Scale (HAS), Short Functionality Scale (SFS). All subjects gave informed consent. First the question was read and then the subject wrote down the answers. The form was the same for all the subjects.

Results: We interviewed 80 subjects (32 patients, 25 their family and 23 people in the community). The SSE score of patients, family and in the community that believe that PWE are stigmatized or rejected is higher than the SSE scores of who don’t believe it. Although there was strong correlation high SSE scores and poor functionality; there wasn’t any correlation with SSE and DDS, HAS, age of epilepsy onset, time of epilepsy, education and social class.

Conclusions: Prejudice and discrimination are often worse than the seizures themselves in terms of impact on daily life of people with epilepsy and their family. The understanding of the aspect of epilepsy is important to reduce the burden of epilepsy.

Disclosure: Nothing to disclose

EP3130

Spreading depression enhances the rate of neurogenesis in the rat hippocampus and dentate gyrus

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Introduction: Spreading depression (SD) known by transient loss of spontaneous and evoked neuronal activity and changes in ionic, metabolic and hemodynamic characteristics of the brain. Neuronal damage followed by SD, supposed to have a dramatic impression on SD-derived pathologic conditions. We aimed to determine whether SD is able to stimulate persistent neurogenesis.

Methods: Wistar rats (60-80gr) randomly chosen and 3M KCl injected for induction of SD. Four weeks after the first injection, all rats were decapitated and the brains removed. The density of mitotic cells, divided cells, and new neurons in the pyramidal cell layer of hippocampal CA1 and CA3 and granular cell layer of dentate gyrus was assessed. We also detect the DNA during the S phase using Bromodeoxyuridine (BrdU).

Results: A remarkable increase occurred in the number of BrdU-labeled cells in hippocampal region, detected by immunohistochemistry method. The density of mitotic cells, divided cells, and new neurons in the pyramidal cell layer of hippocampal CA1 and CA3 and granular cell layer of dentate gyrus was assessed. We also detect the DNA during the S phase using Bromodeoxyuridine (BrdU).

Conclusions: We conclude that SD potentiates to trigger persistent neurogenesis in rat hippocampus.

Disclosure: Nothing to disclose

EP3131

Abstract withdrawn
EP3132

Dentatorubral pallidoluysiana atrophy: study of a Portuguese family

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Introduction: Dentatorubral pallidoluysiana atrophy (DRPLA) is a rare neurodegenerative disorder. The juvenile type is often diagnosed as progressive myoclonus epilepsy (PME), whereas the adult type exhibits a Huntington-like phenotype.

Methods: To describe a Portuguese ancestor’s family with DRPLA and prominent genetic anticipation.

Results: Patient IV-4: A 22-year-old woman presented with an 8-years-old onset history of cognitive decline and recurrent complex partial and generalized tonic-clonic seizures, associated with trains of massive stimulus-induced myoclonic jerks since the age of 16 and further cerebellar ataxia. Molecular analysis was negative for PME autosomal recessive causes. The patient died at 32 from medical complications. Patient IV-5 (proband): A 32-years-old woman presented with cognitive decline, behavior disturbances and progressive myoclonic epilepsy, with recurrent generalized tonic-clonic seizures following trains of bilateral massive myoclonus, since the age of 10. Further, she developed progressive cerebellar ataxia, since the age of 18, and bilateral upper limb choreic movements, since the age of 30. Interictal EEG revealed, in both, a generalized slow background activity and predominantly posterior epileptiform activity, with bilaterally synchronous spike and spike-wave discharges. The DRPLA diagnosis was established in patient IV-5 (63 CAG repeats in atrophin-1 gene), after their 64-years-old father (III-6) began to develop mild gait ataxia, dysarthria and cervical dystonia.

Conclusions: Despite extremely rare in non-Japanese population, DRPLA is the second most prevalent autosomal dominant ataxia in Portugal. In patients presenting PME, the diagnosis mainstay relies on the identification of an autosomal dominant pattern in inheritance, which may be misrecognized due to the genetic anticipation.

Disclosure: Nothing to disclose

EP3133

SF-36 metric as a diagnostic aid for conversion disorder

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Introduction: SF-36 metric is widely used for quantifying the Quality of Life (QoL) and country specific normative data are available. In this study, QoL perceptions of patients suffering from epilepsy and Conversion Disorder related to Psychogenic Non-Epileptic Seizures (Cd-PNES) are compared using SF-36 and the efficacy of using SF-36 to identify cases of Cd-PNES is investigated.

Methods: 124 epileptic and 24 Cd-PNES patients filled the SF-36 questionnaire. SF-36 country normalised scores for physical and mental oriented dimensions as well as calculated Physical Health Composite (PHC), Mental Health Composite (MHC) outcomes were statistically compared and their cross-correlations evaluated.

Results: PHC scores of epileptics were similar to healthy population values but Role Physical and General Health dimensional scores were lower (all $p<0.05$) by ½ standard deviation (s.d.); Cd-PNES patients had lower PHC and physical dimension scores by ½ s.d. (all $p<0.05$). While female epileptics MHC scores were one s.d. below normal with all mental dimensions being negatively affected (all $p<0.05$), Cd-PNES patients MHC scores were >2 s.d. below normal (p$<0.05$) further underscoring by one s.d. epileptic patients for all mental except Social Function dimensions (p$<0.05$). Correlation between PHC and MHC scores was absent ($r^2=0.02$) in epileptics but inversely present in Cd-PNES patients ($r^2=0.42$, p$<0.05$). The average of PHC and MHC scores was found to have sensitivity >80% and specificity >83% in discriminating Cd-PNES cases from epileptics.

Conclusions: SF-36 metric may be helpful as a simple diagnostic aid for discriminating Cd-PNES from epilepsy.

Disclosure: Nothing to disclose
EP3134
Epilepsy and sexual function in epileptic patients in mono and polytherapy
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Introduction: Aim of this study was to assess sexual dysfunction in men and women with epilepsy treated with AEDs of old and new generation, in mono and polytherapy.

Methods: 22 epileptic patients (13M, 9F) aged from 22 to 60 and from 32 to 50 years, respectively, and 24 healthy subjects (13M, 11F) of the same age, were administered the Arizona Sexual Experience Scale (ASEX) and the Beck Depression Inventory (BDI) to assess the sexuality and depression, and were taken blood samples for determination of: TT, E2, SHBG, DHEAS, FSH, LH, T, cortisol, Δ4, with the calculation of the FAI. The statistical analysis was performed with ANOVA and simple regression tests.

Results: Statistically significant increases (p≤0.03) in the total ASEX score in patients treated with AEDs, compared with controls, were found; in particular in achieving and maintaining of erection (p≤0.008), in the satisfaction received from the orgasm (p≤0.02), which indirectly reflect increases of SHBG (p≤0.02) and FSH (p≤0.03), and decrease of DHEAS (p≤0.008) and FAI (p≤0.01) in male subjects. In female subjects the comparison of the scores of ASEX with hormonal profile, in patients and controls, did not reveal any significant difference.

Conclusions: In male subjects, the comparison of the scores of ASEX between patients and controls shows an impairment of sexual function, according to hormone profile (SHBG, FSH, DHEAS, and FAI), which indirectly indicates an overall reduction in free testosterone levels (TF).

Disclosure: Nothing to disclose

EP3135
Historical criteria that distinguish seizures from syncope – external validation of screening questionnaire
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Introduction: Aim of our work is to perform external validation of the screening questionnaire, proposed by Sheldon et al 2002, designed to distinguish seizure from syncope based on historical criteria.

Methods: Alongside to the standard clinical observation, screening questionnaire with 9 historical questions was performed in all patients evaluated due to transient loss of consciousness. Analyses were performed with and without inclusion of additional clinical variables, using multiple regression models. Discrimination values were tested with classification tables and receiver-operator characteristic (ROC) analysis. Calibration characteristics were tested with Hosmer-Lemeshow chi square statistic.

Results: From July 2013 to December 2013, 65 patients have been evaluated due to transient loss of consciousness. Final diagnosis of epileptic seizures was made in 52 patients (23M, 29F) and syncope in 13 patients (10M, 3F). Patients with epileptic seizures have been significantly younger (median 36.5 years, IQR 23-65.5) than patients with syncope (median 59, IQR 50-65). However, only screening questionnaire score has significant effect in multivariate logistic regression model (OR 60.6). Screening questionnaire correctly classified 87.69% patients with sensitivity 86.54% and specificity 92.13%. Area under ROC curve was 0.89, and Hosmer-Lemeshow C² (8) = 12.97, p=0.1130.

Conclusions: Screening questionnaire based on historical criteria could be a useful additional tool for differentiate seizure from syncope. Regarding the pretest probability, questionnaire’s overall gain in diagnostic accuracy is moderate. Potential improvement for the use in the tertiary academic centers could be considered in future studies.

Disclosure: Nothing to disclose
EP3136

Epilepsy surgery including clinical evaluation with invasive monitoring

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Background: Partial epilepsies (PE) are the most frequent cause of refractory seizures. Surgical treatment requires identification of the epileptogenic zone (EZ) as well as the possibility of its safe removal.

Objectives: Audit benefits and risks of surgery after EZ identification with invasive video-EEG monitoring in refractory PE.

Methods: Retrospective design. Patients who have undergone epilepsy surgery in two steps, between August 2012 and August 2013. First approach included video-EEG monitoring with intracranial electrodes. Second time consisted in removal of those electrodes and resection of the EZ.

Results: 21 patients, 31 procedures. Eight (mean age 26, five-50) underwent two times surgery. Pre-surgical investigation included brain CT and MRI, ictal and inter-ictal SPECT, SISCOM, brain PET, scalp EEG, video-EEG monitoring with surface electrodes, electrocorticography and brain mapping, neuropsychological tests, Wada test and psychiatric evaluation. Five patients had seizures on a weekly basis and three had daily. All were polymedicated, average, with three anticonvulsive drugs. They presented different etiologies for the epilepsy and surgery has been decided on an individual basis. Two patients had surgical complications, meningitis and limb paresis. Half presented compatible pathology with presurgical hypothesis: three cases of dysplasia, one ganglioglioma. Six patients were seizure-free after surgery. Two maintained the same frequency. All with follow-up in neurology and neurosurgery appointments.

Conclusion: Two-step epilepsy surgery arises when noninvasive monitoring, including multiple approaches, is not enough for EZ identification. In our series, this strategy allowed a significant improvement of clinical status and quality of life.

Disclosure: Nothing to disclose