P.022

Neuroimaging findings and seizure type as risk factors for adult focal drug resistant epilepsy

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Background: About 35% of patients with epilepsy may develop drug-resistant epilepsy (DRE). Identifying risk factors associated with DRE will allow us to identify earlier patients in the course of the disease. *Methods:* This is a case-control study nested within a cohort. Chart reviews of subjects who full fill inclusion criteria were completed. Inclusion criteria included age > 18 years, focal epilepsy determined by clinical correlation and EEG. DRE was determined by ILAE criteria. *Results:* 149 subjects were included. Seventy had DRE (cases), and seventy-nine did not have DRE (controls). DRE group had a mean age of 41 years (SD + 14.8) compared to the control group (49 + 17.5) (p=0.003). DRE group had a mean age at diagnosis of epilepsy of 19 + 15.3 compared to the control group with a mean of 33.6 + 21. (p=<0.001). The main risk factors identified in this study were; cortical dysplasia OR 8.67 (CI 1.04-72.3, p= 0.026); mesial temporal sclerosis (MTS) (OR 2.69; CI 1.12-6.47; p= 0.024); and presence of complex partial seizures (OR 2.04. *Conclusions:* Young age at diagnosis of focal epilepsy, diagnosis of cortical dysplasia, MTS, and presence of complex partial seizures are risk factors for DRE

P.023

Clinical spectrum of epilepsy associated with polymicrogyria and candidacy for surgical management

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Background: Polymicrogyria (PMG), a malformation of cortical development, describes an area of cerebral cortex with excessively small convolutions. This study examines the clinical spectrum of epilepsy associated with PMG, a condition which commonly presents as medically-refractory epilepsy. *Methods:* All patients investigated in the Epilepsy Monitoring Unit from 2006 to 2015 at our centre and identified to have PMG by MRI were studied by retrospective chart review. *Results:* We identified 8 patients (4 male), mean age 33 years (range: 28 to 46). Seven had childhood onset of epilepsy. All experienced focal-onset seizures; 6 had occasional evolution to generalized, bilaterally convulsive seizures. PMG was associated with schizencephaly in 3 cases. Five patients were investigated with intracranial electrodes. Two patients underwent resective surgery, 1 achieved seizure-freedom, and 1 had class III (ILAE classification) following parietal corticectomy. Two patients underwent placement of vagus nerve stimulation and one a stimulator of the anterior nuclei of the thalami. *Conclusions:* Medically-refractory cases of PMG should be considered for presurgical evaluation, despite only a small portion being amenable to resective surgery. Extensive cortical malformation on MRI made intracranial electrodes necessary to identify the epileptic zone. Epilepsy surgery remains an important consideration given the possibility of seizure-freedom, as achieved in our patient.

P.024

Stimulus-Induced Rhythmic, Periodic or Ictal Discharges (SIRPIDs): associated factors and prognostic implications

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Background: SIRPIDS were first described in 2004 in patients admitted in an intensive care unit. Despite few studies attempting to better characterize SIRPIDS, their pathophysiology and clinical implication remain uncertain. *Methods:* Adult patients hospitalized in an intensive care unit with alteration of consciousness who underwent EEG recording in three separate centers were included in this retrospective study. Demographic data and EEG findings were noted. Characteristics of SIRPIDS were documented. The main outcome measures included the incidence of SIRPIDS, association of SIRPIDS with mortality and other EEG characteristics, EEG and clinical predictors of mortality. *Results:* 416 patients were included and SIRPIDs were identified in 43 patients (10.3%). The proportion of patients with SIRPIDs was not significantly different across the three sites (p=0.3351). Anoxia (p=0.0009), antiepileptic medications (p=0.0109), electrographic seizures (p=0.0259), triphasic waves (p=0.0012) and epileptiform discharges (p=0.0242) were independently associated with the presence of SIRPIDs. Older age (p=0.0050), anoxia (p=<0.0001) and absence of EEG reactivity (p<0.0001), but not SIRPIDs (p=0.1668), were independently associated with in-hospital mortality. *Conclusions:* In critically ill patients undergoing EEG, SIRPIDs occurred in 10% and were associated with other electrographic abnormalities previously reported to indicate poor prognosis. SIRPIDs were not independently associated with in-hospital mortality.

P.026

Focal DBS of Posterior Cingulate Cortex for Refractory Nonlesional Epilepsy: A Case Report

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Background: Deep brain stimulation for epilepsy is becoming an effective option for the treatment of refractory epilepsy. This is the case of a 19-year-old male patient who has had refractory seizures since 2.5 years old. Seizures occur up to 100 times per day, including gelastic, complex partial, and generalized tonic-clonic types. *Methods:* Continuous video-EEG monitoring, technetium 99m ECD SPECT, PET-CT and 3T MRI are used for localization. Depth electrodes are implanted in right frontal orbital, cingulate and lateral frontal regions. *Results:* Video-EEG records 79 seizures arising from the right frontocentral region. Clinically, patient assumes a fencing posture, with left arm extension. Some seizures undergo secondary generalization. SPECT reveals subtle asymmetric hyperperfusion in right mesial frontal area, while PET-CT and MRI do not show focal lesion(s).Stereo-EEG recording and stimulation confirm seizure onset and trigger zone in the premotor cingulate posterior region. Treatment with stimulation in this region at 130-150 Hz, 4-5 mA, and pulse duration 0.1 ms reduces seizure frequency from 100/day