P.022

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

L Hernandez-Ronquillo (Saskatoon) P Lebony-Roy (Saskatoon) S Buckley (Saskatoon) J Tellez Zenteno (Saskatoon)*

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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

LM Mai (London) DA Steven (London) AG Parrent (London) SM Mirsattari (London) JG Burneo (London)*

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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

S Braksick (Rochester) D Burkholder (Rochester) T Spyridoula (Lausanne) L Martineau (Québec) J Mandrekar (Rochester) A Rossetti (Lausanne) M Savard (Québec) J Britton (Rochester) A Rabinstein (Rochester)*

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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

AW Wong (Saskatoon) F Moien-Afshari (Saskatoon)*

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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

to 3/week. Seizures last only 2-3 seconds, without postictal confusion leading to improvements in neuropsychological function. AED dosages are not reduced. *Conclusions:* Successful intracranial EEG localization of otherwise non-lesional non-resectable seizure focus permits the use of deep brain stimulation that effectively reduces refractory seizure frequency.

P.027

Investigation of hippocampal sub-structures in HS and non-HS focal temporal lobe epilepsy at 7T

BG Santyr (London) M Goubran (London) J Lau (London) B Kwan (London) SM Mirsattari (London) JG Burneo (London) S de Ribaupierre (London) RR Hammond (London) TM Peters (London) AR Khan (London)*

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Background: The clinical identification of hippocampal sclerosis (HS) is important in predicting surgical outcomes in patients with temporal lobe epilepsy (TLE). In cases where gross hippocampal sclerosis is not identifiable clinically, a more detailed analysis of hippocampal subfields using ultra-high-field magnetic resonance imaging (MRI) may reveal areas of abnormality, which was the focus of our study. *Methods:* Patients (N=13) with drug-resistant TLE (9 no-HS, 4 HS) and 20 age-matched healthy controls were scanned and compared using a 7T MRI protocol. Using a manual segmentation scheme to delineate hippocampal subfields, subfield-specific volume changes were studied between the two groups. In addition, radiological patient assessment at 7T was correlated with measured subfield changes. *Results:* Volumetry of the hippocampus at 7T in HS patients revealed significant ipsilateral subfield losses in CA1 and CA4DG. Volumetry also uncovered subfield volume losses in 33% of no-HS patients, which had not been detected conventionally. Furthermore, 89% of no-HS patients showed abnormality (internal architecture or size) at 7T, identified by radiologists blinded to the patient's initial classification. *Conclusions:* These preliminary findings indicate that hippocampal subfield volumetry assessed at 7T may be superior to conventional visual inspection by a neuroradiologist in the identification of hippocampal pathologies in TLE.

P.028

Incidence and management of seizures and epilepsy after ischemic stroke: a systematic review

MV Vyas (Toronto) J Wang (Toronto) BA Davidson (Toronto) G Saposnik (Toronto) JG Burneo (London)*

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Background: Seizures and epilepsy are well-recognized complications after stroke. However, the reported incidence varies and so does their management. *Methods:* We conducted a systematic review and sought observational studies that reported incidence of seizures and/or epilepsy following arterial ischemic stroke in adults, and those that reported the management of epilepsy, specifically the use of EEG to determine the diagnosis, timing of initiation of anti-epileptic drug (AED), and the treatment response to AEDs. We systematically searched in Medline including Pre-Medline and EMBASE databases from their inception to October 1, 2015. First the titles and then the articles were reviewed and rated by two independent reviewers, and disagreements were resolved by consultation with a third reviewer. A pre-set data abstraction form was used for extracting the information of interest. *Results:* A total of 11,815 titles were found from the initial search strategy across all databases following de-duplication. Of these 130 studies are included for full text review. The adjudication process is underway and the reviewers are sifting through these studies to select the studies that will be included in the final review. *Conclusions:* Understanding incidence and management of post-stroke epilepsy is important to improve the quality of life of stroke survivors.

General Neurology

P.029

Case report: Facial diplegia and aseptic meningitis in a 44 year-old man returning from Côte d'Ivoire

HA AlDhukair (Montreal) R Altman (Montreal) A Parks (Montreal) MP Cheng (Montreal) A Damian (Montreal)*

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Background: Bilateral facial paralysis is a rare manifestation of Human Immunodeficiency Virus (HIV). Few cases of HIV seroconversion syndrome presenting with aseptic meningitis and facial diplegia have been previously reported. *Methods:* Case Report. Case Description: A 44-year-old male with uncontrolled hypertension who presented with 5-day history of migrainous headache, buccolabial dysarthria, meningismus and dysguesia. Three weeks prior to presentation, he suffered a transient febrile illness preceded by an unprotected sexual encounter while vacationing in Côte d'Ivoire. Examination was significant for hypertensive urgency, bilateral lower motor neuron (LMN) facial paralysis, and meningeal irritation. Investigations revealed acute on chronic renal impairment and left ventricular hypertrophy. Brain MRI (without contrast) revealed microhemorrhages with dystrophic calcifications and microangiopathic changes. CSF analysis revealed 55 WBC (lymphocytic), normal glucose, and 0.67g/L protein. The infectious work-up was positive for HIV, which was confirmed by Western Blot (WB). CD4 count was 176 cells/μL and the viral load was 419,289 copies/ml. Lyme antibodies were also positive by enzyme-linked immunosorbent assay (ELISA), but negative by WB. Discussion: Facial diplegia is a rare manifestation of HIV, and can be indicative of a seroconversion syndrome. This case illustrates another layer of complexity; deciphering acute from chronic systemic manifestations of hypertension, and appreciating falsely positive Lyme antibodies by ELISA during acute HIV seroconversion.

P.031

Lemierre's syndrome - a rare disease with devastating complications

S Alhusaini (Montreal) S Althubait (Montreal) C Melmed (Montreal) M Sidel (Montreal)*

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Background: Lemierre's syndrome is a rare but serious complication of bacterial oropharyngeal infection. It is characterized by