on eye tracking measures of attention and executive function may reflect alterations in white matter tracts.

P.036

Clarithromycin induced sleep paralysis: a case report and review of literature

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Background: Clarithromycin is a macrolide antibiotic, which has been successfully used for treating narcolepsy without cataplexy and primary hypersomnia. Sleep-paralysis has not been reported as a side effect of this medication. *Methods:* We report a 44-year-old right-handed female, who presented with three episodes of paralysis over 2-day. Each spell occurred upon awakening or while falling asleep lasting less than 2-minute. Only one episode was accompanied by tingling and numbness. She denied cataplexy, sleep attacks, hypnopompic and hypnagogic hallucinations. She had no history of similar episodes. She had never experienced migraine with or without aura. She was obese and suffered nocturnal snoring. She had recently been started on Clarithromycin for pneumonia. Her neurological examination was normal. *Results:* Brain MRI was normal. Stroke work up including carotids CT angiogram, 24-hour Holter monitoring and echocardiogram were unremarkable. Polysomnogram when she was not on Clarithromycin indicated mild obstructive sleep apnea and no narcolepsy. She had no further episodes of sleep paralysis after Clarithromycin was discontinued. *Conclusions:* We believe that administration of Clarithromycin was the cause of sleep paralysis. We hope that this case report increases awareness about this particular side effect of Clarithromycin and leads to further investigation about the etiology of sleep paralysis.

P.038

A case report of an interesting paraneoplastic voltage-gated channelopathy

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Background: Morvan syndrome is an autoimmune paraneoplastic disorder affecting of voltage-gated potassium channels, most commonly the CASPR-2 subunit. The disorder is primarily characterized by hyperexcitability of both the central and peripheral nervous system accompanied by autonomic dysfunction. Clinically, the syndrome manifests as confusion, hallucinations, insomnia, hyperhidrosis, orthostatic hypotension, and muscle cramps with myoclonus. *Methods:* Patient chart, imaging, electrophysiology, and laboratory findings were reviewed from the time of MS diagnosis and through the course of treatment until symptom resolution. *Results:* Here we report a case of Morvan Syndrome in a 56 year old male with a previous history of thymic squamous carcinoma accompanied by paraneoplastic myasthenia gravis and myositis. His clinical presentation was notable for subacute onset of muscle cramping, insomnia, which progressed to also include visual and auditory hallucinations. He also had notable dysautonomic symptoms including orthostatic blood pressure changes, sialorrhea, and hyperhidrosis. The diagnosis

was confirmed with a positive serum assay for antibodies against the CASPR-2 subunit of voltage-gated potassium channels. *Conclusions:* This case is notable because to our knowledge it one of the first to document a voltage-gated channelopathy in association with previous thymic cancer (and not thymoma). Moreover, this is a patient presenting with two other other autoimmune syndromes, i.e. myasthenia gravis and myositis.

P.039

New association of anti-Hu positive limbic encephalitis and sensory ganglionopathy with small cell gastric tumour

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Background: While anti-Hu antibody associated encephalitis has been well-documented in association with a variety of neoplastic processes, paraneoplastic limbic encephalitis and sensory ganglionopathy with positive anti-Hu antibodies has not previously been linked in the literature with a neuroendocrine gastric tumour of advanced stage. *Methods:* Case report *Results:* We present the case of an 86-year old woman who developed behavioural changes, paroxysmal anxiety attacks and poor balance several months after being diagnosed with poorly differentiated gastric small cell tumour in a clinical setting of weight loss and anemia. Anti-Hu antibodies were present. MRI showed signal abnormalities in the right mesial temporal lobe with contrast enhancement. Paroxysmal lateralized EEG changes were recorded and EMG/NCS showed absent sensory nerve responses. Behavioural symptoms stabilized under treatment with intravenous immunoglobulins, but sensory ataxia continued to worsen. The patient declined further therapy and deceased two months after transfer to palliative care. *Conclusions:* To our knowledge, this is the first report linking small cell gastric tumour with limbic encephalitis, sensory ganglionopathy-associated ataxia and anti-Hu antibodies. This description further broadens the clinical spectrum of anti-Hu syndrome.

P.040

Redefining true leukocytosis in the traumatic lumbar puncture

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Background: Clinicians rely on a correction formula (Predicted CSFWBC=CSFRBC×BloodWBC/ BloodRBC) to determine if a true CSF leukocytosis exists. This formula may overestimate true CSF leukocytosis leading to delayed diagnosis and treatment of meningitis. *Methods:* A retrospective review of CSF data of 105 patients registered at 3 hospitals (Saskatoon, Canada) between 2011-2013 who met the following criteria: 1) CSF samples from lumbar puncture (LP) contained≥1000 RBC/mm3; 2) a complete blood count (CBC) performed within 24 hours of LP; and 3) CSF not obtained due to high clinical suspicion of meningitis and was negative for microbial staining and culture. Regression analysis was performed to determine the relationship between actual and predicted CSF WBC values. *Results:* Mean adult age was 48.9 years; CSF profile (mean WBC

146.3×10⁶/L; RBC 17374×10⁶/L; glucose 4.1 mmol/L; protein 1.4 g/L); mean peripheral WBC 8.2×10^9/L; RBC 3.9×10^9/L. Mean pediatric age was 1.4 years; CSF profile (mean WBC 171.8; RBC 41763; glucose 2.7; protein 1.7); mean peripheral WBC 12; RBC 7.2. The observed LP CSF WBC value was 47% of predicted (r^2=0.54 pediatric cohort; r^2=0.91 adult cohort). *Conclusions:* True CSF leukocytosis in both pediatric and adult patients could be missed in a traumatic CSF sample if correction is based on current formulas. We propose a modifcation: ObservedCSFWBC =0.5×[CSFRBC×BloodWBC/BloodRBC].

P.041

Does brain tissue oxygenation (BtO2) predict cognitive decline in patients undergoing hemodialysis? A feasibility study

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Background: Cognitive impairment is highly prevalent in individuals with end stage kidney disease (ESKD) undergoing hemodialysis. The cause is not understood. Our overall hypothesis is that repetitive cerebral hypoperfusion during hemodialysis contributes to accelerated cognitive dysfunction in this patient population. *Methods:* All participants underwent a baseline assessment with the KINARM, a robotic device that provides quantitative metrics of the sensorimotor control of the upper limb in humans. For patients undergoing hemodialysis, BtO2 was monitored during one dialysis session per week. Follow up KINARM assessment was done at 3 months. *Results:* To date, 7 patients have completed baseline testing, with 3 being re-evaluated at 3 months. At baseline, patients were impaired on of the 8 tasks, with the exception of a test of working memory. There was a variable correlation between hemodynamics (e.g. blood pressure and heart rate), fluid removal, and BtO2 levels. At 3 months, the 3 patients improved on the majority of the performance metrics assessed with the KINARM. *Conclusions:* The KINARM is a feasible instrument to measure cognitive dysfunction in individuals with ESKD. In a small cohort, there is improvement in neurocognitive function 3 months after the initiation of dialysis.

MOVEMENT

P.042

Associations of pain and depression with marital status in patients diagnosed with Parkinson's disease

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Background: Depression and pain are significant clinical problems that are comorbid with Parkinson's disease (PD). However, the relationship of these variables with the marital status of patients with PD has not been explored in previous studies. The goal of this study was to assess the possible relationship between depression prevalence, depression severity, and pain interference with the marital status of the sufferers of PD. *Methods:* This study included 40 patients and 40 healthy control participants who were assessed for depression prevalence and pain interference using The Hospital Anxiety and Depression Scale and the Brief Pain Inventory, respectively. *Results:* When compared to the control groups, the PD (Single) group was found to have the highest prevalence of depression, followed by the PD (Married) group whereas the Control (Single) group was found to have a higher prevalence than the Control (Married) group (P < 0.0001). A main effect was found on depression severity (P < 0.0001), but no significant differences were observed between the PD groups. Lastly, PD (Single) patients had significantly greater pain interference scores than the PD (Married) patients (P < 0.05) with no other significant case-control or control-control group differences. *Conclusions:* Patient-spouse relationship may have a mitigating effect on patient outcomes of depression prevalence and pain interference.

P.043

Perceptual descriptors and clinical determinants of pain in Parkinson's disease: focus on patients' experiences

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Background: Pain is a disabling non-motor symptom of Parkinson's disease (PD), which remains underacknowledged, undertreated and often undeclared by patients in the clinical practice. Prevalence of pain ranges from 40-75% among PD patients; however, clinical determinants and self-reported perceptual experiences of pain require further research. *Methods:* 121 PD patients (age: 67.3±11.4) from community-based clinic were analyzed cross-sectionally. Perceptual experiences and clinical predictors of pain were assessed using structured interviews, questionnaires and neurological examinations. *Results:* 80 (66%) PD patients reported pain; 65 (54%) described the severity as 'moderate/high'. Dystonic was the most frequent clinical pain 37/80 (48%), followed by neuropathic (36%), akathisia (29%) and musculoskeletal (28%). More than one type of clinical pain was assessed in 22 (28%) patients. Aching was the most common perceptual descriptor of pain (46%), followed by sharp/deep (30%), tension (18%) and dull (14%). PD localized on the right side quadrupled the odds of pain on the right (OR=4.4, 95%CI [1.1-18.2]); and pain described as 'sharp' predicted neuropathic pain (OR=5.6, 95%CI [1.1-29.2]). Pain prevalence also increased with progressive Hoehn-and-Yahr stage. Interestingly, only 51% of patients perceived effects of PD medications on pain symptomology. *Conclusions:* Perceptual descriptors of pain can provide novel approaches to classify, treat and manage PD. Longitudinal investigations with larger sample are warranted.