P.058

Length dependent sensorimotor peripheral neuropathy often results in ventral abdominal sensory loss

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Background: Length-Dependent Sensorimotor Peripheral Neuropathy (LDSMPN) affects the longest nerve fibers in the body. Less well-appreciated, and absent from the current literature, is that LDSMPN affecting thoracic segments gives rise to ventral abdominal sensory loss on clinical exam. *Methods:* Consecutive patients seen for LDSMPN (n=30) were evaluated prospectively for the presence or absence of ventral abdominal sensory loss. Demographic variables, symptoms, quantitative neurologic findings (Neuropathy Impairment Score [NIS]) and final diagnosis were examined using descriptive statistics. *Results:* Ventral abdominal sensory loss was documented in 20/30 LDSMPN patients (66.7%), mean age was 64.1 years (range 33-81), M:F gender ratio was 19:11, mean NIS was 21.4 (range 0-77). NCS/EMG abnormalities were found in 25/30 patients, with 5/30 having a clinical exam and/or other electrophysiological evidence convincing for LDSMPN. LDSMPN patients without ventral abdominal sensory loss (n=10) had a mean age of 61.2 (range 45-73), M:F of 7:3, and mean NIS of 20.9 (range 0-54). *Conclusions:* 1) Ventral abdominal sensory loss appears to be common in patients diagnosed with LDSMPN of a variety of causes; 2) in addition to those innervating distal limb territories, distal sensory fibers from the thoracic region represent another category of length dependent involvement in LDSMPN; 3) the clinical examination of LDSMPN should include the ventral abdomen.

P.060

A case of mononeuritis multiplex complicating Epstein-Barr virus infection

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Background: Mononeuritis multiplex is a painful, asymmetrical peripheral neuropathy involving motor and sensory nerves. This neurological condition is classically associated with systemic diseases such as connective tissue disorders, vasculitis, hematologic diseases including cryoglobulinaemia and amyloidosis. It has also been reported infrequently as a paraneoplastic or post infectious disorder. *Methods:* Case report *Results:* We are reporting a case of a 35-year-old man who presented with mononeuritis multiplex following an infectious mononucleosis associated with a mixed cryoglobulinemia. He was treated with IVIG, IV pulse steroid and a prednisone taper over 7 months. Later on, he had a nerve transfer from FCR (*flexor carpi radialis*) to ECRB (*extensor carpi radialis brevis*) and PIN (*posterior interosseous nerve*) due to complete denervation of the PIN without evidence of spontaneous recovery. *Conclusions:* Acute EBV infection should be suspected in the setting of mononeuritis multiplex. This is the first reported case of nerve transfer for this type of nerve injury.

STROKE

P.061

Multi-modal synchrotron imaging techniques to quantify elemental and molecular changes after stroke in an animal model

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Background: Effects of stroke at the cellular and sub-cellular level remain poorly understood by conventional techniques. We use synchrotron-based imaging techniques to study elemental and biochemical changes in the infarct and penumbra after stroke in an experimental model. *Methods:* Ischemic stroke is induced in mice using the previously validated photothrombotic model. Animals are sacrificed at various time-points after stroke. Fourier transform infrared spectroscopic imaging (FTIRI) is used to gather sub-cellular (< 1 μm spatial resolution) imaging data of lipid oxidation and protein aggregation in the areas of interest. X-ray fluorescence (XRF) imaging is used to image the distribution of bio-important elements at the cellular and sub-cellular spatial resolutions. Routine histology and immunohistochemistry are used to co-localize cell-types to areas of interest. *Results:* Preliminary XRF results indicate significant reduction in the concentration of multiple elements in the infarct, compared to the penumbra, at day 1 post-stroke. Some elements begin to return to normal concentration in the penumbra at day 3. FTIRI data shows that lipid and total protein levels decrease, while aggregate protein levels increase in the penumbra. *Conclusions:* Multi-modality synchrotron imaging can be used to map elements as well as bio-molecules in a stroke model. A better understanding of these changes can guide therapeutic interventions after stroke.

P.063

Durability over time of strategies to reduce door-to-needle times in thrombolysis of acute ischaemic stroke

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Background: Faster administration of tissue plasminogen activator (tPA) for patients with acute ischaemic stroke yields greater clinical benefits. We implemented door-to-needle (DTN) time reduction strategies at our centre and evaluated their short- and long-term effects on in-hospital treatment delays and clinical outcomes. *Methods:* Stroke team pre-notification, direct computed tomography (CT) transfer, not routinely waiting for labs and tPA delivery on CT table were implemented in June 2013. We included all thrombolysed patients admitted directly to our hospital between January 2012 and March 2015. In-hospital delays and clinical outcomes (Modified Rankin scale, mRS) at 3 months were compared between patients pre- and post-modification, and the latter period was divided into early and late phases to assess the durability of our modifications. *Results:* Forty-eight individuals were treated pre-modification, compared to 58 post-modification. The median DTN time

was reduced from 75 (interquartile range: 60-93) minutes to 46 (33-59) minutes (p<0.0001). The median DTN time in the early and late post-modification phases was not different (41 versus 46 minutes, p=0.4085). Functional outcome at 3 months was not different in the two groups (proportion of mRS≤1: 34% versus 28%, p=0.882). *Conclusions:* We were able to decrease our DTN time for treatment of acute stroke by implementing simple modifications and these improvements persisted over time.

P.064

Delays in the emergency department for stroke patients, medical complications and predictors of outcomes: the McGill experience

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Background: The Canadian Stroke Best Practice recommends admission of patients to a specialised stroke unit within three hours. We aimed at assessing delays in our emergency department (ED) and correlating these with medical complications and clinical outcomes. *Methods:* Predictors and outcomes This is a retrospective review of patients (n=353) admitted with ischemic strokes (January 2011-March 2014). We assessed the length of stay in ED, medical complications in ED and in the stroke unit, functional status (modified Rankin Scale) at discharge and survival. *Results:* The median delay in ED was 13.8 hours. The rate of medical complications in the ED was 14% (most common being delirium), compared to the stroke unit with 46.7% (most common being pneumonia). Worse functional outcome was correlated with diagnosis of pneumonia (standardised β coefficient=0.2, p=0.001) and presence of brain oedema in the stroke unit (standardised β coefficient=0.2, p<0.01). Increased risk of death was correlated with brain oedema (OR=649.2, 95%CI=19-2184, p<0.01) and sepsis in the stroke unit (OR=26.8, 95%CI=2.1-339, p<0.01). *Conclusions:* We found a significant delay in the admission of our patients from the ED to the stroke unit, which is not in keeping with the present guidelines. Medical complications were correlated with worse outcomes. Future analyses will correlate ED delays with clinical outcomes.

P.065

The impact of a risk algorithm on time-to-care: targeting triage for acute cerebrovascular syndrome (ACVS) patients in a rapid TIA clinic

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Background: Approximately, one-third of TIA clinics use the ABCD[2] score to triage referrals. However, the usefulness of the score is limited because of its low specificity for non-cerebrovascular/mimic conditions. Timely access of referred patients to specialized TIA clinics may reduce recurrent stroke. *Methods:* The SpecTRA project implemented a novel electronic triage system in the TIA clinic that services Vancouver Island (BC), which replaced the existing ABCD[2] triage model. A clinical classifier generating an ACVS probability score was calculated on the basis of the clinic referral form information. Next, a time-varying ABCD[2]-based risk score derived from Johnston et al. (2007) was calculated, which is then weighted by the ACVS probability score to produce a finalized triage score. Time-to-care was compared pre- (2013/14) and post- (2014/15) implementation. *Results:* One year results show a statistically significant improvement in that time-to-care for ACVS patients (ABCD[2] 4/5) was one day earlier with the new triage system (median= 4days since symptom onset; N=250) compared to the previous year (median=5days; N=255) (Mann-Whitney U=38130, p< 0.001). No difference in unit arrival times (median= 5days) for non-cerebrovascular patients was observed (Mann-Whitney U=5563, p= 0.15). *Conclusions:* The performance of our ACVS triage system highlights quality improvement potential in time-to-care for outpatient TIA clinics.

P.066

Failing a dysphagia screen after acute ischemic stroke is highly predictive of poor outcomes

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Background: Bedside dysphagia screening is recommended for all patients with acute ischemic stroke, in order to detect swallowing impairment early and prevent complications. However, limited data are available on outcomes associated with failing a dysphagia screen. *Methods:* We used the Ontario Stroke Registry to identify patients who were admitted to Regional Stroke Centres from 2010-2013 and received a dysphagia screen within 72 hours. We used multivariable regression to determine outcomes of patients who failed the dysphagia screen. *Results:* Among 5145 patients who underwent dysphagia screening, 2458 (47.8%) failed and 2687 (52.2%) passed. Patients who failed had more co-morbidities and presented with more severe strokes (mean NIHSS 11.0 vs. 5.4). Among those who failed, 9% required permanent feeding tubes, versus 0.1% among those who passed. After controlling for age, co-morbidities, and stroke severity, failing a bedside swallowing screen remained highly predictive of poor outcomes, including decubitus ulcer (adjusted odds ratio aOR 10.5), pneumonia (aOR 4.6), discharge to long-term care (aOR 4.1) and 30-day mortality (aOR 4.5; 16.6% vs. 2.2%). *All p <0.0001 *Conclusions:* Patients who failed a dysphagia screen on admission had dramatically worse outcomes after controlling for baseline factors. A bedside dysphagia screen provides immediate risk stratification for acute stroke patients and can be used to guide appropriate care.

P.067

Incidence of tissue-defined stroke and large vessel occlusion in acute stroke alerts in a non-teaching hospital system

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Background: Stroke alerts are used to triage patients with acute neurologic change for rapid imaging evaluation. CTA has been advocated to rapidly triage stroke patients for endovascular therapy. However, the yield of this approach is not well established. We