

symptoms failed to respond to initial and higher IVM doses. We report their clinical outcomes. *Results:* IAM was used in 19 patients. The median loading dose was 8 mg and average maintenance dose was 0.78 mcg/kg/min. Angiographic improvement was seen in 15 (79%) and clinical improvement - within the first 48 hours - was seen in all patients. The median mRS was 3 at time of discharge and 1 three months later. Five patients lost follow up. *Conclusions:* IAM appears to be safe and effective in this small retrospective series of RV and SRV complicating aSAH. Angiographic and clinical improvements were observed. Further prospective studies are warranted to confirm these findings.

## E.04

### Coma and delirium are associated with low levels of brain tissue oxygen in critically ill patients

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*Background:* The cause of ICU delirium is unknown. We used near infrared spectroscopy (NIRS) to measure brain tissue oxygenation (BtO<sub>2</sub>) in critically ill patients, to test the hypothesis that poor cerebral oxygen delivery contributes to ICU delirium. *Methods:* Adult patients were enrolled if they required mechanical ventilation for >24 hours, and/or vasoactive agents. Patients were excluded if they had previous cognitive dysfunction, brain injury on admission, or a life expectancy <24 hours. BtO<sub>2</sub> was measured for the first 24 hours of ICU admission. The confusion assessment method-ICU (CAM-ICU) was used to screen for delirium. Participants were designated to one of three groups on the basis of their predominant neurological status (comatose, delirious, or intact). *Results:* To date, 47 patients have been recruited. Both delirious and comatose patients' had significantly lower BtO<sub>2</sub> levels compared to intact patients (P<0.001). There was a significant correlation between hemoglobin and BtO<sub>2</sub> (R<sup>2</sup>=0.347, P<0.01). However, when correlation analysis was conducted separately amongst the three groups, the delirious patients (R<sup>2</sup>=0.485, P<0.05) were the strongest contributors to this positive correlation. *Conclusions:* Delirious patients exhibited the lowest BtO<sub>2</sub> recordings and demonstrated a significant association between Hb and BtO<sub>2</sub>. This study offers potential insight into the pathophysiology of ICU delirium.

## E.06

### Developing and evidence-based palliative care curriculum for neurology resident trainees

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*Background:* Graduating neurology residents require general palliative care skills. This study aims to develop an evidence-based palliative care curriculum to provide neurology residents with the general palliative care skills required for providing patient care along the continuum of life. *Methods:* A needs assessment of the palliative skills necessary for a neurology resident was performed. Focus groups were held with physicians, allied health care and senior residents. Semi-structured interviews were held with patients and their

caregivers. Interviews analysed using qualitative thematic analysis techniques. The Kolb learning style inventory will determine the learning style of neurology residents and inform the curricular design. *Results:* Qualitative analysis identified 3 overarching challenges for neurology residents: 1) *uncertainty* regarding disease trajectory in neurology and timing of palliative care discussions; 2) *cohesiveness* of the health care team regarding end of life issues; 3) *the role of the resident* in initiating palliative care. Other principals identified for inclusion were: symptom management, communication, psychosocial aspects of care, care coordination and access, and myths and pitfalls in palliative care. *Conclusions:* This project will identify the current best evidence and expert opinion in palliative care neurology. The data will be used to develop a novel Canadian neurological palliative care curriculum.

## E.07

### The role of the neurologist in advanced multiple sclerosis: the patient's perspective

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*Background:* Few evidence-based disease-modifying treatments exist for progressive multiple sclerosis (MS). How can neurologists best care for patients with advanced MS? Little is known about how patients with progressive MS view their relationship with their treating neurologist, and if the role of the neurologist matches their needs and preferences. *Methods:* A qualitative cross-sectional analysis of patient preferences regarding the role of the neurologist in their care. Patients with progressive MS and an EDSS score of 6 or more were invited to participate. Patients and caregivers completed separate written questionnaires and were then interviewed by one of the authors. Data were subjected to thematic coding to group common themes and the distribution of themes among different disability sub-groups was analyzed. *Results:* Full results will be available at the time of the conference. Preliminary results suggest that the neurologist has an important role in updating patients on the progress of their disease and responding to questions. Patients are fearful of becoming dependent on others for their care. The concept of palliative care is unfamiliar to most patients. *Conclusions:* Despite a lack of disease-modifying treatments for progressive multiple sclerosis, patients believe that the neurologist has an important role in their care.

## E.08

### Subcutaneous vs. intravenous immunoglobulins for chronic inflammatory demyelinating polyneuropathy and multifocal motor neuropathy

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*Background:* High-dose intravenous immunoglobulin (IV-Ig) is an evidence-based treatment for chronic inflammatory demyelinating polyneuropathy (CIDP) and multifocal motor neuropathy (MMN). Recently, subcutaneous Ig (SC-Ig) has received increasing attention. We performed a meta-analysis to assess the efficacy of SC-Ig versus IV-Ig. *Methods:* We

searched PubMed, Embase, and Scopus from January, 1990 to December, 2015 for publications comparing IV-Ig vs. SC-Ig in patients with CIDP or MMN. We performed fixed-effects meta-analyses for strength changes as measured by the Medical Research Council sum score changes (MRC-SS). *Results:* A total of 8 studies comprising 138 patients (88 with CIDP and 50 with MMN) were included in the meta-analysis. Considering the total population the use of SC-Ig showed slightly better results for MRC-SS (ES=-1.78, 95%CI=-3.45 to -0.11, I2<0.001%). However, when CIDP and MMN were compared separately, there were no differences between treatments (CIDP: ES=-0.28, 95%CI=-0.57 to 0.02, I2<0.001%; MMN: ES=-0.34, 95%CI=-3.99 to 3.31, I2<0.001%). *Conclusions:* We found comparable efficacy between SC and IV-Ig administrations for CIDP and MMN. These results suggest that SC-Ig is a suitable alternative treatment method, especially when other situations (e.g. convenience, safety profile) warrant its use. Further studies are needed to explore the efficacy of SC-Ig for CIDP and MMN.

## E.09

### Predictors of optimal endovascular therapy results among patients with acute ischemic stroke

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*Background:* Several studies have demonstrated the safety and efficacy of endovascular therapy for patients with acute ischemic stroke. However, patient, imaging and treatment factors associated with the optimal functional outcome require better definition. *Methods:* We pooled data from 8 randomized controlled trials (SYNTHESIS, MR RESCUE, IMS III, MR CLEAN, ESCAPE, EXTEND-IA, SWIFT-PRIME, and REVASCAT). We conducted subgroup and sensitivity analyses to evaluate predictors of optimal functional results (modified Rankin scale, mRS) at 90 days. *Results:* Meta-analysis of 8 trials including 2,423 patients yielded that endovascular therapy resulted in 44.6% functional independence (mRS 0-2) versus 31.8% in the usual care group (OR 1.71, 95% CI 1.18-2.49, P=0.005). This treatment effect was significantly greater among patients with confirmed angiographic imaging of proximal arterial occlusion (OR 2.24, 95% CI 1.72-2.90, P<0.001), in patients who received the combined therapy of intravenous tPA and endovascular intervention (OR 2.07, 95% CI 1.46-2.92, P<0.001), and when using stent retriever for mechanical thrombectomy (OR 2.39, 95% CI 1.88-3.04, P<0.001). *Conclusions:* The relative functional benefit associated with endovascular therapy among patients with acute ischemic stroke was increased when combined with intravenous tPA, with confirmed proximal arterial occlusion on angiographic imaging, and with use of stent retrievers for mechanical thrombectomy.

## E.11

### Non-invasive ventilation in patients with amyotrophic lateral sclerosis: practice patterns amongst Canadian care providers

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*Background:* The purpose of this study was to: 1) describe current non-invasive ventilation (NIV) usage patterns amongst Canadian ALS healthcare providers; 2) compare/contrast with previous practice patterns; and 3) explore barriers to NIV access encountered by current practitioners. *Methods:* Healthcare professionals (including physicians, respiratory therapists, and nurses) at major Canadian ALS care centres were sent a web-based survey. Participants were asked to provide input on practice demographics, access and initiation of NIV, and follow-up of NIV. Quantitative data were analyzed with descriptive and comparative statistics, while qualitative data were analyzed using interpretative phenomenological analysis method to identify emergent themes. *Results:* 26 participants responded. Median NIV usage was 39% (range 10-100%), about double of what was previously reported (18%). Mean times from referral to routine and urgent NIV initiation were 13 (95% CI 9-17) and 5 (95% CI 3-7) days respectively. NIV was most commonly initiated in clinic (68%), while 38% report having access to home-NIV initiation. Lack of social support (62%) and cognitive impairment (46%) were the most common deterrents to initiating NIV. Similar to what is previously reported, barriers to access can be stratified to patient, clinical, institutional, and regional levels. *Conclusions:* Despite increased usage and improved access, there remain considerable barriers for ALS patients to receive NIV.

## CNSS PLATFORM PRESENTATIONS

### F.01

#### Prognostic factors in adults with spinal cord injury without radiological abnormalities (SCIWORA): MRI study

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*Background:* Spinal Cord Injury Without Radiological Abnormality (SCIWORA) is underreported and poorly recognized in adults. This entity is an important subtype of spinal cord injury (SCI) with relatively good outcomes. Despite this, few studies have been performed to determine specific imaging-related prognostic factors. *Methods:* A retrospective review of adult patients with cervical SCI admitted to two University hospitals from January 2000 to December 2010 was performed. Only patients with an MRI performed within 72 hours after trauma were included. All patients with bony injury or traumatic malalignment were excluded. Data gathered on the remaining patients included demographics, mechanism of injury, severity of SCI, long-term patient outcome, improvement in neurological condition and MRI results. *Results:* 49 patients selected. Patients with extramedullary hemorrhage showed worse neurological status at initial examination. Disruption of either the anterior longitudinal