

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

ligament or ligamentum flavum was associated with worse outcomes at initial examination and at 1-year follow up. Lesion length was also significantly associated with outcomes at 1 year evaluation and initial evaluation. *Conclusions:* Early MRI has an important prognostic value in patients suffering SCIWORA. Lesion length is a powerful predictor of outcome. Soft tissue injury and spinal cord changes play a role in the severity of injury as well as the ability to recover.

F.02

Towards the complete control of brain metastases using surveillance screening and stereotactic radiosurgery

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Background: The incidence of brain metastases is increasing with the development of improved systemic therapies with limited impact on intracranial disease. The purpose of this study was to determine if there is a threshold tumor size below which local control (LC) rates approach 100% after stereotactic radiosurgery (SRS). *Methods:* 200 patients with 1237 tumors were identified from a prospective registry of patients having undergone SRS between 2012-2014. Histology consisted predominantly of non-small cell lung cancer (NSCLC), melanoma and breast cancer. *Results:* The median tumor size was 6mm in diameter or 70mm³ and most commonly NSCLC. Thirty-three tumors had local progression at a median time of 8.8 months. The 1- and 2-year actuarial LC for all tumors were 97% and 93%. LC of 100% was seen for intracranial metastases less than 100mm³ or 6mm in diameter, independent of histology. Total tumor volume was an independent predictor of overall survival, after adjusting for age, KPS and extracranial disease status. *Conclusions:* SRS can achieve LC rates approaching 100% for subcentimeter metastases. The earlier detection and prompt treatment of small intracranial metastases may prevent the development of neurological symptoms, the need for surgical resection, and potentially improve overall survival. The results of this study would favour the implementation of routine staging MRIs.

F.03

Timing of incidence and recovery of delayed facial palsy after vestibular schwannoma resection: insight into mechanisms

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Background: Delayed facial palsy (DFP) after resection of vestibular schwannomas (VS) is described as worsening of facial nerve function after a normal postoperative result. Several mechanisms have been postulated to explain this phenomenon, although none satisfactorily explain all of its features. Furthermore, systematic documentation of recovery rates is lacking. *Methods:* 403 consecutive cases of VS resection between 2001 and 2015 were reviewed. Patients with preoperative facial palsy were excluded. Patients developing significant facial palsy (HB grade ≥ 3) were categorized into groups based on timing of onset: immediate facial palsy (IFP), “early-onset” DFP (within 48h), and “late-onset” DFP (after 48h).

IFP patients were subdivided into “minor” (HB grade 3) and “major” (HB grade ≥ 4) groups. These groups were compared with respect to demographics, intraoperative data, and recovery. *Results:* The late-onset DFP group demonstrated the quickest recovery to HB ≤ 2 (2.9 weeks), followed by the minor IFP group (8.5 weeks), then the early-onset DFP group (53 weeks). Major IFP group exhibited the poorest recovery with only 32% recovering to HB grade ≤ 2 within one year. *Conclusions:* The bimodal distribution in recovery time in delayed facial palsy patients implies separate underlying phenomena. We propose that a delayed demyelination of the facial nerve occurs in late-onset DFP, and best explains the uniformly rapid recovery observed.

F.04

Flow diversion in the treatment of aneurysms: A randomized care trial and registry

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Background: The Flow diversion in the treatment of Intracranial Aneurysm (FIAT) trial was designed to guide the clinical use of flow diversion. *Methods:* FIAT proposed randomized allocation flow diversion or standard management (observation, coiling, parent vessel occlusion, or clipping), and a registry of non-randomized patients treated with flow diversion. Primary safety outcome was death or dependency (mRS > 2) at 3 months. Primary efficacy outcome was angiographic occlusion at 3-12 months combined with independent clinical outcome. *Results:* Of 112 participating patients recruited, 78 were randomized, and 34 received flow diversion within the registry. The study was halted for safety concerns. Twelve of 73 patients (16.4%; CI [9.7% -26.7%]) who were allocated or received flow diversion at any time were dead (n=8) or dependent (n=4) at 3 months or more, crossing a predefined safety boundary. Death or dependency occurred in 5 of 36 patients randomly allocated flow diversion and in 5 of 36 patients allocated standard treatment (13.9%; [6.1%-28.7%]). Efficacy was below hypothesized expectations: 15 of 36 patients (41.7%; [27.1%-57.8%]) randomly allocated flow diversion failed to reach the primary outcome, as compared to 11 of 36 patients allocated standard treatment (30.1%; [18.0%-46.9%]). *Conclusions:* Flow diversion was not as safe and effective as hypothesized. More randomized trials are needed.

F.05

Characterization of NBCA glue polymerization for embolization of brain AVM's

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Background: Brain arteriovenous malformations (AVM's) are abnormal connections between arteries and veins. Endovascular glue embolization with N-butyl cyanoacrylate (NBCA) is an accepted form of treatment, with most complications related to timing of polymerization. Current literature reports a wide range of polymerization