of this study was to determine if gender equality exists in the management of degenerative lumbar disease. Methods: Part 1: A systematic scoping review was conducted according to PRISMA guidelines, in order to synthesize the adult surgical literature regarding gender differences in pre- and post-operative clinical assessment scores for patients diagnosed with degenerative lumbar disease.

Part 2: An ambispective cohort analysis (multi-variate logistic regression) of the Canadian Spine Outcomes Research Network registry was performed to address knowledge gaps identified in "Part 1". Results: Part 1: Thirty articles were identified, accounting for 32,951 patients. Female patients have worse absolute pre-operative pain, disability and health-related quality-of-life (HRQoL). Following surgery, females have worse absolute pain, disability, and HRQoL, but demonstrate an equal or greater interval change compared to males.

Part 2: Data was analyzed for 5,039 patients. Significant gender differences in pre-operative utilization of healthcare resources (medication use, diagnostic testing, medical and allied healthcare professional visits) were identified. Conclusions: Significant gender disparities in clinical assessment scores and the pre-operative utilization of healthcare resources were identified for patients undergoing surgery for degenerative lumbar disease.

B.3

Activated gene pathways in post-infectious hydrocephalus (PIH):: proteogenomics and the PIH expressome

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Background: Proteogenomics, the integration of proteomics and RNASeq expands the discovery landscape for candidate expressed gene networks to obtain novel insights into host response in post-infectious hydrocephalus (PIH). We examined the cerebrospinal fluid (CSF) of infants with PIH, and case controlled against age-matched infants with non-postinfectious hydrocephalus (NPIH) to probe the molecular mechanisms of PIH, leveraging molecular identification of bacterial and viral pathogens. Methods: Ventricular CSF samples of 100 infants ≤ 3 months of age with PIH (n=64) and NPIH (n=36) were analyzed with proteomics and RNASeq. 16S rRNA/DNA sequencing and virome capture identified *Paenibacillus spp.* and cytomegalovirus as dominant pathogenetic bacteria implicated in our PIH cohort. Proteogenomics assessed differential expression, gene set enrichment and activated gene pathways. Results: Of 616 proteins and 11,114 genes, there was enrichment for the immune system, cell-cell junction signaling and response to oxidative stress. Proteogenomics yielded 33 functionally and genetically associated gene sets related to neutrophil activation, platelet activation, and cytokines (interleukins and interferon) signaling. Conclusions: We identified PIH patients with severe disease at time of hydrocephalus surgery, to have differential expression of proteins/genes involved in neuroinflammation, ependymal barrier integrity and reaction to oxidative stress. Further studies are needed to examine those proteins/genes as biomarkers for PIH.

B.4

Spatiotemporal mapping and decoding of oculomotion in the pediatric frontal eye field

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Background: The frontal eye fields (FEFs) are linked to oculomotor control and hypothesized to reside in the prefrontal cortex, where electrical stimulation reportedly evokes contraversive eye movements. The exact location and function of the FEFs in humans is controversial. Stereo-electroencephalography (SEEG) is a minimally invasive technique used to guide epilepsy surgery. It provides a unique opportunity to collect human neurophysiological data outside of the operating room and has been used by other groups to advance our understanding of specific brain functions. Methods: Two pediatric subjects undergoing non-lesional epilepsy workup were enrolled into this prospective, IRB-approved study, and received brain MRI prior to SEEG implantation. SEEG recordings were collected with video of the subjects' eyes while performing gaze-related tasks. Results: Stimulation testing elicited contraversive head turning with or without eye deviation, and hemifacial spasm, depending on the site of stimulation. Low-threshold sites eliciting these stereotyped movements were located just deep to the inferior precentral gyrus. Stimulation of sites in the posterior middle frontal gyrus did not elicit eye movements. Conclusions: Our findings suggest that the FEFs are located more posteriorly than widely held, involving the motor cortex. Further testing in pediatric and adult subjects is warranted to confirm this hypothesis.

B.5

Prospective cohort analysis of normal versus mild cognitive impairment for quality of life outcome following DBS for Parkinson's disease

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Background: All guidelines for DBS in Parkinson's disease (PD) include a contraindication for 'dementia'. It is unclear where this cut-off should occur and if patients with mild cognitive impairment (MCI) do not do as well. This prospective cohort

analysis assessed if pre-operative cognition affected post-operative quality of life. Methods: PD patients receiving bilateral STN-DBS (n=100) were prospectively studied using STROBE guidelines. All had Montreal Cognitive Assessment (MoCA), motor (UPDRS), mood (BDI-II), and quality of life (Parkinson Disease Questionnaire summary index, PDQ-39-SI). Two cohorts, pre-operative MCI (MoCA:18-25) and normal cognition (MoCA:26-30), had post-operative PDQ-39-SI at 1-year. The primary outcome was the proportion of patients with an improved PDQ-39-SI at 1-year. Results: Cohorts were not significantly different in age, severity of illness, response to dopamine, or mood. MCI was present in 27/100. Improved quality of life at 1-year occurred in 75% with normal cognition and 70% with MCI (p=0.54) with RR=1.1 (95% CI, 0.8-1.5). Linear regression analysis showed no correlation between pre-operative cognition and post-operative outcome (R^2=0.02). Conclusions: Parkinson's patients with MCI should be offered DBS if their motor symptoms require surgery. Guidelines for DBS surgery in PD should change from "dementia is contraindicated" to "patients require adequate cognitive functioning, MoCA greater than equal to 18."

B.6

Endovascular treatment of acute ischemic stroke in patients with pre-morbid disability: a meta-analysis

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Background: Trials of endovascular thrombectomy (EVT) for acute stroke have excluded patients with pre-morbid disability. We performed a meta-analysis to assess the effectiveness and safety of EVT in patients with pre-morbid disability. Methods: According to PRISMA guidelines, we searched for studies describing outcomes in patients with pre-morbid disability (modified Rankin Scale [mRS] 2-5), treated with EVT or medical management (MM). Random-effects meta-analysis was used to pool outcomes including return to baseline mRS at 90 days, symptomatic ICH (sICH), and 90-day mortality. Results: We analyzed 14 studies of patients with pre-morbid disability (mRS2-5: EVT=1,373, MM=253). Compared to medical therapy, EVT was associated with higher likelihood of return to baseline mRS (OR=2.37, 95%CI:1.39-4.04) and a trend towards lower mortality (OR=0.68, 95%CI:0.46-1.02), with similar odds of sICH (OR 1.01, 95%CI:0.49-2.08). In studies comparing patients with vs. without pre-morbid disability treated with EVT, similar results were found except that pre-morbid disability, when defined more strictly as mRS 3-5, was associated with mortality (OR 3.49, p<0.001). Conclusions: In patients with pre-morbid disability, EVT carries a higher chance of return to baseline mRS compared to patients treated with MM or without pre-morbid disability, although with higher mortality than patients without pre-morbid disability. These findings merit validation with randomized controlled trials.

Chair's Select Abstracts - Child Neurology/Neurophysiology (CACN/CSCN)

C.1

Cerebral venous sinus thrombosis in preterm infants

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Background: Previous studies of neonatal cerebral venous sinus thrombosis (CVST) have focused on term infants, and studies of preterm infants are lacking. In this study, we examined the clinical and radiological features, treatment and outcome of CVST in preterm infants. Methods: This was a retrospective cohort study of preterm infants (gestational age <37 weeks) with radiologically confirmed CVST. All MRI/MRV and CT/CTV scans were re-reviewed. Clinical and radiological data were analysed using descriptive statistics, ANOVA and chi-square tests. Results: A total of 26 preterm infants with CVST were included. Of these, 65% were late preterm, 27% very preterm and 8% extreme preterm. Most (73%) were symptomatic at presentation with seizures or abnormal exam. Transverse (85%) and superior sagittal (42%) sinus were common sites of thrombosis. Parenchymal brain injury was predominantly periventricular (35%) and deep white matter (31%) in location. Intraventricular hemorrhage occurred in 46%. Most infants (69%) were treated with anticoagulation. None of the treated infants had hemorrhagic complications. Outcome at follow-up ranged from no impairment (50%), mild impairment (25%) and severe impairment (25%). Conclusions: Preterm infants with CVST are often symptomatic and have white matter brain lesions. Anticoagulation treatment of preterm CVST appeared to be safe and was not associated with hemorrhagic complications.

C.2

Muscular MRI pattern recognition for muscular dystrophies: the era of artificial intelligence beyond a systematic review

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Background: Genetic neuromuscular diseases (NMD) are a heterogeneous group of disorders comprised hundreds of genes. Despite the advanced genetic testing modalities, about 40 % of patients with NMD do not have a diagnosis. Muscle MRI has been proven as a useful tool to orientate the genetic testing by looking at the muscle involvement severity pattern. Moreover, muscle MRI patterns can be specific and informative for muscular dystrophies and yet can be characteristic and diagnostic. Methods: Systematic review was conducted to review muscle MRI patters for all Limb Girdle Muscle Dystrophies (LGMD). Then, we applied artificial intelligence (AI) on muscle MRI patterns for LGMDs and other NMDs