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