

P.176**Perioperative factors predict two year trajectories of pain and disability following anterior cervical discectomy and fusion**

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Background: A subset of patients experience poor outcomes following anterior cervical discectomy and fusion (ACDF). Our study aimed to identify postoperative trajectories of disability, neck/arm pain and determine baseline measures that predict subgroup membership. **Methods:** Patients with cervical spondylotic radiculopathy undergoing ACDF are presented. Prognostic factors comprised demographic, health and surgery-related variables. Study outcomes were trajectories of neck disability index scores, numeric rating scales for neck/arm pain modeled with latent-class growth analysis. Associations were explored using robust Poisson models and reported with risk ratios and 95% confidence intervals. **Results:** Patients (N = 352; mean (SD) age = 50.9(9.5) years, 43.8% female) identified trajectories for disability (excellent=45.3%, fair=39.2%, poor=15.5%), arm pain (excellent=24.5%, good=52.0%, poor=23.5%), and neck pain (excellent=13.7%, good=63.1%, poor=23.2%). Greater physical and mental health-related quality of life were associated with a reduced risk of poor outcome (per SD, 0.40[0.30, 0.53]-0.80[0.65, 0.99]), while higher risk for depression (per SD, 1.36[1.12, 1.65]-2.26[1.84, 2.78]), longer wait time (per 90 days, 1.31[1.05, 1.63]-1.64[1.20, 2.24]), and longer procedure time (per 30 min, 1.07[1.03, 1.10]-1.08[1.05, 1.12]) were associated with an increased risk of poor outcome for all outcomes. Poor disability was increased with self-reported depression (3.03[1.76, 5.21]), greater neck-to-arm pain ratio (2.63 [1.28 to 5.40]), ASA score > 2 (2.26[1.33, 3.83]), and preoperative opiates (2.05[1.18, 3.56]), while preoperative physiotherapy (0.51[0.30, 0.88]), spinal injections (0.48[0.23 to 0.98]), and

regular exercise (0.44 [0.24, 0.79]) decreased risk. Receiving compensation and smoking were associated with poor outcome for neck pain. Remaining candidate prognostic factors were not associated with clinical outcome. **Conclusions:** Perioperative factors were shown to decrease risk of poor outcomes for pain and disability two years following ACDF.

STROKE**P.177****Assessing lesion severity in a mouse model of intracerebral hemorrhage**

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Background: Intracerebral hemorrhage (ICH) is caused by the rupture of a blood vessel, resulting in bleeding into the brain. This type of stroke accounts for 12-15% of all strokes and is the most fatal type of stroke (40% mortality rate). ICH stroke presents a greater burden to survivors as 90% of ICH survivors have some degree of disability. Because of the poor patient outcomes, there is a clear need for identifying new treatments as well as establishing the efficacy of existing treatments. **Methods:** Using previously described techniques we aim to establish a mouse model of ICH at the University of Saskatchewan. We observed them at a 1-24-, 48- and 72hr mark post-stroke and scored for neurological deficits. **Results:** We currently have conducted 23 model trials. We have data on mice at 1-, 24, and 72 hr post-stroke. We have observed and begun to analyze a lesion area that can be seen in H&E stained sections, and further assessed with FTIR, and synchrotron modalities. **Conclusions:** We have analyzed several of the specimens with FTIR imaging and synchrotron analysis with the Canadian Light Source. We have preliminary results of the progression of metabolites in the hematoma and perihematoma zone of the ICH.