## C.7

### Does gender equality exist in the surgical management of degenerative lumbar disease?

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**Background:** Despite efforts toward gender equality in clinical trial enrollment, females are frequently underrepresented and gender-specific data analysis is often unavailable. The purpose 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.

# POSTER PRESENTATIONS

## Adult Neurology (CNS)

## Autoimmune Encephalitis

## P.002

### Successful Treatment of Supra-Refractory Status Epilepticus Secondary to Anti-N-Methyl-D- Aspartate Receptor Encephalitis With Electroconvulsive Therapy

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**Background:** Anti-N-Methyl-D-Aspartate (NMDA) receptor encephalitis is an autoimmune disease associated with antibodies against heteromers NR1 and NR2 subunits of the cell surface of the NMDA receptors, causing many psychiatric and neurological symptoms. This includes new-onset refractory status epilepticus. **Methods:** A 33-year-old previously healthy female developed new-onset refractory status epilepticus caused by anti- NMDA receptor encephalitis without the presence of tumours. **Results:** The clinical course was complicated by prolonged status epilepticus, which was refractory to many antiepileptic drugs (levetiracetam, phenytoin, carbamazepine, topiramate, lacosamide, valproic acid), ketamine, propofol, midazolam, including inhalation agents (isoflurane). Also, she received first (intravenous immunoglobulin, intravenous methylprednisolone, and plasmapheresis), second-line immunotherapy (rituximab) and prophylaxis bilateral oophorectomy without clinical or electrographic improvement. However, the patient drug-resistant status epilepticus markedly improved both clinically and electrographically following seven sessions of electroconvulsive therapy. **Conclusions:** Electroconvulsive therapy should be considered as adjuvant therapy for the treatment of immunotherapy resistant encephalitis.

## P.003

### Autoimmune Encephalitis and related disorders are not rare in British Columbia

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**Background:** Autoimmune encephalitis (AE) is a recently described entity that presents with seizures, neuropsychiatric manifestations, and movement disorders. This observational chart review of AE aims to assess the burden of AE and related disorders at two Vancouver academic medical centers. **Methods:** All patients with Mitogen Laboratory AE antibody testing in 2018 were identified. Electronic hospital records were used to determine patient characteristics. **Results:** 1266 unique tests were ordered on 315 inpatients and outpatients. Of 37/315 (11.7%) seropositive patients, 26/37 (70.2%) patients had clinical data. Seropositive results included autoantibodies to NMDA (n=3), LG1 (n=2), CASPR2 (n=1) and paraneoplastic autoantibodies included GAD65 (n=2), PNMA2 (n=5), recoverin (n=3). There were four AE cases in 14 seronegative patients based on discharge diagnosis. 15/30 of patients had seizures and three developed status epilepticus. 15 had neuropsychiatric manifestations. 14 had a movement disorder. For inpatients, average length of stay was 24.3 days and there were 5 intensive care unit (ICU) admissions. Immunotherapies used included corticosteroids, PLEX, rituximab, IVIg, and cyclophosphamide. **Conclusions:** In two hospitals serving approximately two million people in 2018, there were 30 cases of AE in 2018. AE presents with a

broad range of neurologic symptoms and seronegative testing does not preclude AE.

## P.004

### Autoimmune Encephalitis: Modifiable and Non-Modifiable Predictors of Relapse

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**Background:** Approximately 25% of encephalitis cases in North America are immune mediated. For most forms of autoimmune encephalitis (AIE), risk of relapse is unclear and little evidence exists to guide which patients have the highest risk and whether standard treatments reduce this risk. Our objective was to determine the factors associated with AIE relapse. **Methods:** We performed a chart review consisting of patients with AIE presenting to the Calgary Neuro-Immunology Clinic and Tom Baker Cancer Centre between 2015 and 2020. Predictors of relapse were determined with use of t-test. **Results:** Outcome data was assessable in 39/40 patients, 17/39 (44%) patients relapsed. Seropositive patients and those with abnormal CSF were more likely to relapse, although neither reached statistical significance (p=0.12, 0.059). Patients with longer duration of steroid and steroid sparing treatment prior to relapse, and those on steroids at the time of relapse, had milder relapses (p=0.024, 0.026, 0.047). There was no difference in steroid or steroid sparing treatment use at 3, 6, and 12 months between groups. **Conclusions:** Risk of relapse in AIE is high (44%), with most relapses occurring in the first 3 years. Continuous immunosuppression lessens the severity of relapse, although our study did not confirm it reduced the occurrence of relapse.

## P.005

### Ovarian resection in anti-NMDAr encephalitis

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**Background:** Anti-N-methyl-D-aspartate receptor encephalitis (NMDArE) is commonly associated with ovarian teratomas, surgical resection of which can lead to significant neurologic improvement. However, the necessity of aggressive resection at the time of diagnosis is unknown; specifically, whether unilateral or bilateral oophorectomy, versus lesionectomy and partial oophorectomy (ovariotomy), is required. **Methods:** Eleven patients with NMDArE who underwent ovarian resection between January 1st 2012 and December 31st 2020 were retrospectively identified. Primary outcome was good one-year functional status, defined as modified Rankin Scale (mRS) score of 0-1. **Results:** Median age at encephalitis onset was 24 years (19–38); median delay from symptom onset to surgery was 39 days (16–129). Six patients (54.5%) had good mRS scores, unrelated to surgical resection type. **Conclusions:** Added clinical benefit of aggressive ovarian resection techniques at one-year follow-up was not identified in our data. Further longitudinal studies are needed to determine the indications for different surgical techniques in patients with NMDArE.

**Ovarian resection approaches and associated functional outcomes in patients with NMDArE**

| Surgical approach, n (%) | mRS 0–1 at1-year, n (%) | mRS 2-6 at1-year, n (%) |
|---|---|---|
| Unilateral ovariotomy, 1 (9) | 1 (100) | 0 (0) |
| Unilateral oophorectomy, 5 (46) | 3 (60) | 2 (40) |
| Bilateral ovariotomy, 1 (9) | 1 (100) | 0 (0) |
| Bilateral oophorectomy, 4 (36) | 1 (25) | 3 (75) |

## P.006

### Neural antibody testing for autoimmune encephalitis: A Canadian single-centre experience

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**Background:** We reviewed our autoimmune encephalitis neural antibody testing using brain tissue indirect immunofluorescence (TIIF) and cell-based assays (CBAs) after one year. **Methods:** Samples were tested from March 2019–March 2020 by TIIF and CBA for anti-NMDAR, LGI1, CASPR2, AMPAR, GABA(B)R, DPPX, IgLON5 and GAD65. Weakly positive or positive CBA, with or without corresponding TIIF positivity, was reported positive. Clinical questionnaires were submitted for clinical-serological correlation. Patients with a compatible clinical phenotype and no more likely alternative diagnosis were classified as true-positives, while all others were flagged as possible false-positives. **Results:** Twenty of 373 patients (5.4%) had a positive neural antibody. All anti-LGI1 (N=4), GAD65 (N=4), and GABA(B)R (N=1) were classified as true-positives. In contrast, only 3/6 anti-CASPR2 and 3/5 anti-NMDAR were classified as true-positives. Among true-positives, 2/4 anti-LGI and 3/3 anti-CASPR2 were positive by CBA only. All possible false-positive results exhibited only weak serum staining by CBA, with negative serum TIIF and negative CSF CBA/TIIF (if available). **Conclusions:** Clinical sensitivity of CBA seems higher than TIIF for neural antibodies studied herein, but may come at some expense to clinical specificity. Among patients with weak serum staining by CBA, correlation with serum TIIF, CSF CBA/TIIF, and clinical presentation is recommended.