

**P.027****Autoimmune encephalitis: modifiable and non-modifiable predictors of relapse***M Hansen (Edmonton)\* C Hahn (Calgary)*

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Background: Approximately 25% of encephalitis cases in North America are autoimmune (AIE). For most forms of AIE, it is unclear which patients have the highest relapse risk and whether standard treatments reduce this risk. Our objective was to determine the overall risk of relapse and whether chronic immunosuppressive therapy modifies that risk. Methods: We performed a chart review consisting of all 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 patients, 17/39 (44%) patients relapsed, and most relapses (76%) occurred within 3 years. Patients not on any immunosuppression at the time of relapse had a greater increase in CASE score, a proxy for presentation severity, at relapse compared to those on immunosuppression ( $p=0.0035$ ). Conclusions: The risk of relapse in AIE is high (44%). Immunosuppression at the time of relapse, which may occur up to 3 years after initial presentation, lessens the relapse severity, although it remains unclear if it can reliably prevent relapses. Our data enforces the importance of long-term follow up and that ongoing immunosuppression may be helpful, particularly in the first 3 years after initial presentation.

**P.028****Is there utility in duplicating antibody testing for autoimmune encephalitis? A comparison of results obtained from Mayo and Mitogen Dx***S Gutierrez (Calgary)\* J Roberts (Calgary) M Yaraskavitch (Calgary) C Hahn (Calgary)*

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Background: Autoantibody testing for suspected autoimmune encephalitis (AIE) in Alberta is commonly performed by Mitogen Dx (MDx) using cell-based assays (CBAs) for cell surface antibodies and line immunoassay (LA) for intracellular antibodies without confirmatory tissue immunofluorescence/immunohistochemistry (TIFF/IHC). Duplicate testing is often sent to Mayo Clinic (MC) verify, resulting in increased costs. Methods: Antibody panel results were obtained for all patients who had testing sent to both MC and MDx from adult hospitals in Calgary between 2018 and 2020. Positive antibodies were evaluated to be pathogenic/non-pathogenic by chart review and expert consensus. Results: Thirty-four individuals had antibody panels completed at both labs. Overall agreement (positive/negative panel) was fair ( $\kappa = 0.24$ ,  $p = .08$ ), even after excluding low-titre GAD65 antibodies through MC ( $n=9$ , 26.5%). MDx reported more non-pathogenic serum results, including: anti-SOX1 ( $n=3$ ), anti-NMDAR ( $n=2$ ) and anti-GABA(B)R ( $n=1$ ). All pathogenic antibodies ( $n=3$ ) were positive in both laboratories. Conclusions: No new pathogenic antibodies were identified by sending duplicate testing to MC; however, a larger number of non-pathogenic antibodies were reported by MDx, likely due to

lack of confirmatory TIFF/IHC. Antibody testing for AIE should be done in labs performing confirmatory TIFF/IHC on all CBA/LA results to avoid unnecessary investigations and/or treatments.

**P.029****Relevance and home completion rate of patient reported outcome measures set in chronic inflammatory neuropathies***E Ogalo (Vancouver)\* C Smith (Vancouver) M Ashe (Vancouver) K Beadon (Vancouver) K Chapman (Vancouver)*

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Background: Patient-centred care is important in the management of chronic inflammatory neuropathies (CIN) given the heterogeneity in disease course and treatment response. Patient Reported Outcome Measures (PROMs) support value-based healthcare by aligning treatment goals with what matters most to patients. This study evaluated the relevance of PROMs to patients and the feasibility of use in clinical management. Methods: PROMs assessing quality of life, pain, fatigue, and overall disability were collected prospectively from 32 patients with CIN every three months over a 12-month period. Patients provided feedback on relevance of the measures. PROMs were sent electronically prior to the visit. Results: Completion rate was 92%. Home vs. in-clinic completion increased from 56% to 85% over the course of the study. There was an association between completion of the panel and perceived relevance. The PROMs were consistently rated as highly relevant, with disability and fatigue measures rated highest. Conclusions: PROMs are appraised as highly relevant among patients with CIDP and MMN. Patients require support initially but adapt to electronically delivered home completion of questionnaires. We recommend inclusion of PROMs into routine clinical practice as a means of capturing aspects of health that are not easily assessed in a clinic visit.

**P.030****Antibody testing for autoimmune encephalitis: a multisite study examining clinical practices in a large Canadian city***J Roberts (Calgary)\* S Gutierrez (Calgary) C Hahn (Calgary) M Yaraskavitch (Calgary)*

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Background: Antibody panels are one diagnostic tool within the comprehensive evaluation of suspected autoimmune encephalitis (AIE). Over-reliance on antibody panels contributes to misdiagnosis and inflated healthcare costs. Methods: Inpatients or outpatients who had AIE antibody testing ordered from one of four adult hospitals in Calgary between January 2018 – January 2020 were included. Medical records of 150 individuals were reviewed, including those with positive antibodies or testing sent to Mayo Clinic, plus a random sample. Results: AIE antibody panels were sent for 469 individuals during the 2-year period; 42 were positive (9.0%) of which 10 were pathogenic. Of 150 individuals included in chart review, 27 (18.0%) met criteria for *possible* AIE at presentation and 16 (10.8%) met criteria for *definite* AIE at final diagnosis. Overall, antibody testing was ordered in both serum and CSF in 36.3% (versus 69.2% meeting *possible* AIE criteria); MRI brain was performed in 92.7% (*possible* AIE 92.6%), EEG in 78.7% (*possible* AIE 100.0%), and lumbar

puncture in 66.7% (possible AIE 96.3%). A sizable proportion did not receive malignancy screening (overall 48.7%; possible AIE 29.6%). Conclusions: Antibody panels are overemphasized in the assessment for AIE and often performed unnecessarily, while other recommended clinical tests are not consistently completed.

## NEUROCRITICAL CARE

### P.031

#### The effect of burst suppression on cerebral blood flow and autoregulation in animals and humans - a systematic review

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Background: Burst suppression (BS) is an EEG pattern in which there are isoelectric periods interspersed with bursts of cortical activity. Targeting BS through anesthetic administration is used as a tool in the neuro-ICU but its relationship with cerebral blood flow (CBF) and cerebral autoregulation (CA) is unclear. We performed a systematic review investigating the effect of BS on CBF and CA in animals and humans. Methods: We searched MEDLINE, BIOSIS, EMBASE, SCOPUS, and Cochrane library from inception to July 2022. The data that were collected included study population, methods to induce and measure BS, and the effect on CBF and CA. Results: In total 45 animal and 26 human studies were included in the final review. In almost all the studies, BS was induced using an anaesthetic. In most of the animal and human studies, BS was associated with a decrease in CBF and cerebral metabolism, even if the mean arterial pressure remained constant. The effect on CA during periods of stress (hypercapnia, hypothermia, etc.) was variable. Conclusions: BS is associated with a reduction in cerebral metabolic demand and CBF, which may explain its usefulness in patients with brain injury. More evidence is needed to elucidate the connection between BS and CA.

## NEUROIMAGING

### P.032

#### Using clinical MRI scans for research purposes: a preliminary feasibility study

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Background: This project aims to bridge the gap between clinical data being collected at a local hospital to be used for research. Methods: 1.5T high-resolution anatomical MRI scans

were collected from ten participants who were already undergoing clinical, imaging, and neurological assessment as part of their standard-of-care. Additional statistical models were used to examine the relationship between grey matter (using voxel-based morphometry [VBM]) and scores on the Toronto Cognitive Assessment (TorCA). Results: There was a lack of consistency in MRI scanning protocols and inconsistent reporting of clinical and neuropsychological data across participants. No significant relationship was found using the p-corrected images at  $p < 0.05$ . When viewing uncorrected images at a threshold of  $p < 0.001$ , we found a significant positive correlation between TorCA scores in the areas of the bilateral superior frontal gyrus, frontal pole, brain stem, and left putamen. Conclusions: Although no significant relationship was found between VBM metrics and TorCA scores, this project represents a crucial step in connecting health research with clinical practice where neuroimaging and neuropsychological assessments are already being collected. This project also informed our research team of areas that are needing to be streamlined and operationalized in future strategies for data collection and input.

## NEUROLOGICAL IMPLICATIONS OF COVID-19

### P.033

#### COVID-19: neurologic and cardiac complications among Chinese and South Asians in Ontario: waves 1-3

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Background: This is a population-based retrospective study of neurologic and cardiac complications of COVID-19 among Chinese and South Asians in Ontario during waves 1-3. Methods: Chinese and South Asians with COVID-19 were identified using a validated surname algorithm and their outcomes of mortality, and cardiac and neurologic complications with those of the general population using multivariable logistic regression models. Results: Compared to the general population ( $n = 439,977$ ), the Chinese population ( $n = 15,208$ ) was older (mean age 44.2 vs 40.6 years,  $P < 0.001$ ) and the South Asian population ( $n = 46,333$ ) was younger (39.2 years,  $P < 0.001$ ). The Chinese population had a higher 30-day mortality (odds ratio [OR] 1.44; 1.28-1.61) and more hospitalization or emergency department visits (OR 1.14; 1.09-1.28), with a trend toward a higher incidence of cardiac complications (OR 1.03; 0.87-1.12) and neurologic complications (OR 1.23; 0.96-1.58). South Asians had a lower 30-day mortality (OR 0.88; 0.78-0.98) but a higher incidence of hospitalization or emergency department visits (OR 1.17; 1.14-1.20) with a trend toward a lower incidence of cardiac complications (OR 0.76; 0.67-0.87) and neurologic complications (OR 0.89; 0.73-1.09). Conclusions: Ethnicity continues to be an important determinant of mortality, cardiac and neurologic outcomes, and healthcare use among Ontario patients with COVID-19.