2332 DIFFERENTIATING STATUS EPILEPTICUS FROM PROLONGED FUNCTIONAL SEIZURES – CAN PERIPHERAL CELL RATIOS AND LACTATE HELP?

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Objectives This study aimed to identify the utility of peripheral neutrophil-to-lymphocyte ratio (NLR), neutrophil-to-monocyte ratio (NMR), monocyte-to-lymphocyte ratio (MLR), platelet-to-lymphocyte ratio (PLR), systemic inflammatory index (SII), systemic inflammatory response index (SIRI) and blood lactate in differentiating between SE and FS.

Methods Retrospective case control study in adults presenting to a tertiary hospital (Alfred Health) between 2017 and 2020. SE was defined as per ILAE criteria for time point 1. FS events needed to meet the same time criterion. Bloods were obtained during the event or within 12 hours of offset.

Results After screening 1262 cases, 79 SE events from 66 patients and 44 prolonged PNES events from 28 patients were analysed. NLR, NMR, MLR, PLR, SII, SIRI and lactate levels were higher in SE compared with FS. Using ROC curves and Youden's index, cut-off values were identified with sensitivities between 0.38 to 0.84, specificities between 0.64 and 1.00 and AUCs between 0.62 to 0.79. Lactate levels peaked at 60 minutes whereas cell ratios mostly peaked between 240 to 360 minutes post onset. Two nomogram prediction models combining lactate and either SII or SIRI were generated. Using ROC curves, AUCs of 0.92 and 0.90, sensitivities of 0.81 and 0.79 and specificities of 1.0 and 0.95 were identified where the cut-off probability of SE was >0.79 and >0.80 respectively.

Conclusion Combining early peaking lactate and later peaking SII or SIRI resulted in prediction models with good sensitivity and specificity for distinguishing SE from FS. If validated, this can have important diagnostic implications.

2333 CRITICAL SHORTAGE OF NEUROLOGISTS IN REGIONAL AND RURAL AUSTRALIA: MODELING NEUROLOGIST SUPPLY IN AUSTRALIA, 2023–2034, REPORT OF THE ANZAN WORKFORCE COMMITTEE

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Background In 2015/16, the annual national expenditure on neurological conditions exceeded AUD3 billion (2.6% of total healthcare expenditure). A comprehensive study of the Australian neurological workforce has not previously been undertaken.

Methods Current neurological workforce was obtained using data from ANZAN (including surveys), the Medical Board of Australia, and other sites. Workforce supply modelling used equations to simulate neurologist influx from training and immigration, and attrition from retirement, emigration, and death. Potential interventions to increase workforce supply were then simulated.

Results In 2021, there were 422 registered neurologists in Australia. The average FTE was 0.769 and, on average, neurologists saw 22.21 (SD=19.36) initial and 39.91 (SD=26.98) review patients per 1.0 FTE (i.e. 329,762 initial and 651,580 review encounters annually). Modelling of the workforce from 2023 to 2034 predicted an increase in neurologists from 422 to 739 (577,475 initial and 1,141,037 review encounters annually). Regional Australia represented approximately 31% of the total population but was served by only 4.1% of the neurology workforce. Neurologist numbers in Regional Australia will increase from 17 to 30 (23,676 initial and 46,783 review encounters). Introduction of 10 or 20 new regional neurologists in 2023 with 5-year placement requirements would result in 31–41 regional neurologists by 2034 (total capacity 24,224–32,039 initial and 47,865–63,305 review encounters), respectively.

Conclusion Modelling of the neurologist workforce in Australia for the period 2023 to 2034 suggests that Regional Australia's significant shortfall is expected to persist. Interventions aimed at increasing regional neurologist workforce are likely to attenuate this shortfall.

2336 CENTRAL NERVOUS SYSTEM (CNS) INFLAMMATION POST COVID-19 VACCINATION: A CASE SERIES

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Objectives Cases of CNS demyelination temporally associated with covid-19 vaccination have been reported in the literature. We report six cases presenting to Royal Prince Alfred Hospital, a tertiary hospital in New South Wales, between May 2021 and January 2022.

Methods We report clinical and MRI features of six individuals with evidence of an inflammatory CNS disorder temporally associated with receiving the Pfizer (n=2) or AstraZeneca (n=4) SARS-CoV-2 vaccines.

Results Age ranged from 30 to 68 years (mean 56), four were female. The onset of neurological symptoms was within 1 to 60 days (mean 28 days) of the first (n=4) or the second (n=2) vaccine dose. Presenting symptoms included visual loss, numbness/paraesthesia, facial/limb weakness, speech disturbance, gait instability, and sphincter disturbance. Presentations were transverse myelitis (n=2), acute disseminated encephalomyelitis- (ADEM) like (n=2), and optic neuritis (n=2). No patients had any prior history of autoimmunity. MRI showed enhancing lesions consistent with active demyelination of the optic nerves, brain and/or spinal cord all but one patient. CSF oligoclonal bands were negative where tested (n=4). The final diagnoses included aquaporin-4 positive neuromyelitis optica (n=1), myelin oligodendrocyte glycoprotein antibody disease (MOGAD) (n=1), transverse myelitis (n=1), optic neuritis