2252 USE OF VIDEO HEAD IMPULSE TESTING TO IMPROVE DIAGNOSIS OF POSTERIOR CIRCULATION STROKE IN THE EMERGENCY DEPARTMENT – A PROSPECTIVE OBSERVATIONAL STUDY

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Outcomes Vertigo is a common presentation to the Emergency Department (ED) with 5% of presentations due to posterior circulation stroke (PCS). Bedside investigations such as the head impulse test are used to risk stratify patients, but interpretation is operator dependent. The video head impulse test (vHIT) provides objective measurement of the vestibular-ocular-reflex (VOR) and may improve diagnostic accuracy in acute vestibular syndrome (AVS). Our aim was to evaluate the use of vHIT as an adjunct to clinical assessment to improve diagnosis of PCS.

Methods 133 patients with AVS were consecutively enrolled from the ED of our comprehensive stroke centre between 2018 and 2021. Patient assessment included a targeted vestibular history, HINTs examination (Head Impulse, Nystagmus and Test of Skew), vHIT and MRI >48hrs after symptom onset. The HINTS/vHIT findings were analysed and compared between vestibular neuritis (VN), PCS and other cause AVS. Clinical course, vHIT and MRI findings were used to determine diagnosis.

Results Final diagnosis was VN in 40%, PCS 15%, migraine 16% and other cause AVS 29%. PCS patients were older than VN patients (mean age 68.5±10.6 vs 60.1±14.2 y, p=0.14) and had more cardiovascular risk factors (3 vs 2, p=0.002). Mean VOR gain was reduced (<0.8) in ipsilateral horizontal and (<0.7) anterior canals in VN but was normal in PCS, migraine, and other cause AVS. V-HIT combined with HINTs was 89% sensitive and 96% specific for a diagnosis of VN.

Conclusions V-HIT combined with HINTs is a reliable tool to exclude PCS in the ED.

2298 NEUROCRITICAL CARE SERVICES IMPROVE MORTALITY AND FUNCTIONAL OUTCOMES FOR BRAIN INJURED ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objectives Neurocritical care (NCC) is a rapidly developing subspecialty which aims to improve outcomes of critically ill neurological patients, although its effect is yet to be determined. We performed a systematic review and meta-analysis to evaluate the impact of neurocritical care units (NCCU) or teams on patient outcomes.

Methods Three electronic databases were systematically searched (MEDLINE, Embase, CENTRAL) up to December 2021, and by citation chaining, for studies comparing specialised NCC to general care for acutely brain-injured adults. The primary outcome was all-cause mortality at longest follow-up. Secondary outcomes were intensive care unit (ICU) length of stay (LOS), hospital LOS and functional outcomes. Random-effects meta-analyses were performed for all outcomes with R.

Results Following screening of 5659 non-duplicated published records, 26 non-randomised observational studies fulfilled inclusion criteria. A meta-analysis of mortality outcomes for 55792 patients demonstrated 17% relative risk reduction (RR 0.83, 95% CI 0.75–0.92) in those cared for in a NCCU or by NCC specialised staff, compared to general care. Subgroup analyses by disease and intervention type did not identify subgroup differences. Eight studies of 4667 patients demonstrated 17% relative risk reduction (RR 0.83, 95% CI 0.70–0.97) for an unfavourable functional outcome with subspecialised care compared to general care. There were no differences in LOS outcomes. Heterogeneity was substantial in all analyses.

Conclusions Subspecialised NCC are associated with improved survival and functional outcomes for critically ill brain-injured adults. Further investigations are necessary to determine the specific aspects of care in NCCUs that contribute to these improved outcomes.

2374 A DECADE ON: EXAMINING THE FREQUENCY OF DIAGNOSTIC CRITERIA IN BEHAVIOURAL VARIANT FRONTOTEMPORAL DEMENTIA

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Objectives A diagnosis of behavioural variant frontotemporal dementia (bvFTD) requires the presence of at least three of the six core (five behavioural, one cognitive) criteria. The contribution of each criterion towards the clinical diagnosis, however, remains unclear. This study assessed the frequency and combinations of diagnostic criteria in a large cohort of patients diagnosed with bvFTD.

Methods Behavioural and neuropsychological features at presentation were assessed in 108 patients with bvFTD; 25 with a genetic or histopathological definite diagnosis and 83 with probable bvFTD. Basic demographic data, including age, sex, years of education and disease duration, were collected.

Results Seventy-nine patients (73.1%) met at least four core diagnostic criteria. The frequency of diagnostic criteria ranged from 89.8% (early apathy/inertia; early loss of

sympathy/empathy) to 7.4% (dysexecutive profile with relative sparing of episodic memory and visuospatial ability). Eighty-nine patients (82.4%) demonstrated either episodic memory dysfunction or visuospatial disability in addition to a dysexecutive profile, disqualifying them from the cognitive criterion according to the diagnostic guidelines. No significant difference emerged between age at disease onset, education level, disease duration or sex and the frequencies of diagnostic criteria.

Conclusions We demonstrate the real-world frequency of the revised diagnostic criteria in the largest cohort of patients with probable and definite bvFTD. Most patients met diagnostic criteria on behavioural features alone. The cognitive requirement is proving disproportionately restrictive and no longer reflects the evidence accumulated in the past decade.

2406 CLINICAL PHENOTYPES AND SURVIVAL IN PATIENTS WITH MOTOR NEURON DISEASE IN THE WAIKATO REGION, NEW ZEALAND

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Objectives Metabolic dysfunction is increasingly recognised to be important in the pathogenesis of Motor Neuron Disease (MND). Little is known about the pre-morbid prevalence of metabolic syndrome(MetS) in MND and its effect on the survival. We reviewed the clinical features and reported the baseline prevalence of MetS and its impact on survival in MND patients. We also studied the difference with respect to ethnicity.

Methods We undertook a retrospective study of MND patients registered at Waikato Hospital, New Zealand, between 2013–2020. We collected various demographic and clinical data. Survival analysis was performed using the Kaplan-Meier and Cox proportional-hazards model.

Results We enrolled 106 MND patients, of which 97% had sporadic MND. The mean age at onset was 64.6 years. The male-to-female ratio was 1.65. 82% were Europeans, 10.4% were Māori and 7.6% others. The mean survival from onset was 53.6months. Overall, 32.7% of patients had MetS at baseline. Moreover, those with MetS had significantly reduced survival than those without; 38.4months versus 61.3months respectively($p=0.044$). MetS was consistently associated with worse survival, even after adjustment for age, gender, and ethnicity, HR 1.68($p=0.041$). Māori patients were more likely to be younger, male, and have primary lateral sclerosis(PLS) and progressive muscular atrophy(PMA), resulting in a trend towards better survival than Europeans.

Conclusion The prevalence of pre-morbid MetS was increased among MND patients. Furthermore, MetS was associated with worse survival. Our study strengthens the view that metabolic dysfunction is a key factor in MND pathogenesis and suggests that MetS should be further studied as a potential risk and prognostic factor.

2247 MULTIMODAL OUTCOMES AFTER FRONTAL LOBE EPILEPSY SURGERY IN A UK COHORT

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Objective To describe long-term seizure remission and relapse patterns, psychiatric comorbidity, and socioeconomic outcomes following frontal lobe epilepsy surgery.

Methods We reviewed data on frontal lobe epilepsy procedures at the National Hospital for Neurology & Surgery, UK, between 1990 and 2020. This included the presurgical evaluation, operative details and annual postoperative seizure and psychiatric outcomes, prospectively recorded in an epilepsy surgery database. Outcome predictors were subjected to multivariable analysis, and rates of seizure freedom analysed using Kaplan-Meier methods. We used longitudinal assessment of the Index of Multiple Deprivation to assess change in socioeconomic status over time.

Results A total of 122 individuals with a median follow-up of seven years were included. Of these, 33 (27%) had complete seizure freedom following surgery, with a further 13 (11%) having only auras. Focal MRI abnormality, a focal lesion on histology (focal cortical dysplasia, cavernoma or dysembryoplastic neuronal epithelial tumour) and fewer anti-seizure medications at time of surgery were predictive of favourable outcome; 67% of those seizure-free for the first 12 months postoperatively never experienced seizure relapse. Thirty-one of 50 who had preoperative psychiatric pathology noticed improved psychiatric symptomatology by two years postoperatively. New psychiatric comorbidity was diagnosed in 15 (13%). Persistent motor complications occurred in 5% and dysphasia in 2%. No significant change in socioeconomic deciles of deprivation was observed after surgery.

Conclusion Favourable long-term seizure, psychiatric and socioeconomic outcomes can be seen following frontal lobe epilepsy surgery. This is a safe and effective treatment that should be offered to suitable individuals early.

2319 DETERMINING THE OPTIMAL CT PERFUSION THRESHOLDS FOR CORE AND PENUMBRA IN ACUTE POSTERIOR CIRCULATION ISCHAEMIC STROKE

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