

013 PROGRESSION OF CLINICAL FEATURES IN LEWY BODY DEMENTIA CAN BE DETECTED OVER SIX MONTHS

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Objective This study aimed to quantify the trajectory and magnitude of change of the key clinical features and corresponding symptom domains of Dementia with Lewy bodies (DBL) and Parkinson’s disease dementia (PDD) including global cognition, parkinsonism, recurrent visual hallucinations, cognitive fluctuations and sleep disturbance.

Methods 116 patients with Lewy body dementia (DLB=72, PDD=44) underwent assessment at baseline, 3 and 6 months as part of a prospective multi-centre randomized control trial. Linear mixed models were constructed for core outcome measures using the Mini-Mental State Examination (MMSE), motor section of the Unified Parkinson’s disease rating scale (UPDRS-III), Dementia Cognitive Fluctuations Scale (DCFS) and the Neuropsychiatric Inventory (NPI).

Results Within the timeframe of our study (6 months) we were able to identify a significant cognitive decline of 1.3 points on the MMSE (P=0.002) and significant worsening of motor parkinsonism with an increase in UPDRS-III score of 3.2 points (P=0.018). Fluctuation severity also increased using the DCFS with a 6 month change in score of 1.3 points (P=0.001). Uniquely, a signal for increased severity of sleep symptoms of 1.2 points (NPI-sleep) was also detectable (P=0.04). Significant changes in neuropsychiatric symptoms were not detected. There was no difference in rates of change of scores between DBL and PDD.

Conclusion Clinically significant rates of change in core clinical features can be detected and quantified in Lewy body dementia over a relatively short period (6 months) using common clinical instruments, and thus may be useful as clinical endpoints for therapeutic trials of disease modifying and symptomatic agents.

014 VISUALISING THE TOPOGRAPHIC PATTERN OF TAU DEPOSITION IN PATIENTS WITH PROGRESSIVE SUPRANUCLEAR PALSY USING PI2620-PET

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Objective The accumulation of tau in the basal ganglia and later cerebellum and frontal cortex is a key pathogenic mechanism in Progressive Supranuclear Palsy (PSP). The ability to detect tau in the living brain has the potential to revolutionise the diagnosis of PSP and other tauopathies, and to monitor the effectiveness of therapeutic interventions targeting tau-based mechanisms. This study investigates the use of a new tau-specific PET radiotracer, PI-2620, as a tool for visualising tau in the living brain.

Methods Ten patients with PSP (age 62-75 years, 6 male) underwent a 60 minute dynamic PET scan with PI2620 (185MBq). The dynamic PET data was processed in to a single parametric image of binding potential (BP) using the simplified reference tissue model and the corpus callosum as the reference region.

Results Visual inspection of the images showed clear uptake in the basal ganglia nuclei. BP was highest in pallidum (1.99), putamen (1.67), thalamus (1.63), substantia nigra (1.62), cerebellum (1.6) and caudate (1.55), compared to 1.2-1.5 across the cortical regions. Higher BP in the basal ganglia nuclei were associated with higher scores on the PSPRS (putamen, r=0.77, p=0.01).

Conclusion PI2620-PET shows promising potential as a technique for specifically imaging and quantitating the topographic pattern of tau distribution in patients with PSP. Further studies are needed to evaluate its use as a diagnostic and treatment monitoring tool for PSP and other tauopathies.
Conclusions We identified notable differences in microbial diversity and GM composition in PD patients compared to HCs that, along with nutritional data, enabled the development of predictive modelling to identify PD. These findings further support the GM as a potentially useful biomarker of PD pathophysiology.

Method A 24 question online validated survey was distributed via email broadcast to all medical students and junior doctors at a metropolitan tertiary care centre in Australia. Responses were collected over 6 weeks with weekly reminder emails for 4 weeks after the initial invitation email.

Results 114 medical students and junior doctors participated in the study. Participants perceived neurology as the most difficult medical specialty compared to 10 other medical specialties (p=0.001). The top three factors contributing to this perceived difficulty were: a lack of understanding of neuroanatomy, lack of diagnostic certainty and lack of clinical exposure, 65% of the participants stated that they had too little planned teaching in neurology with only 36% of the participants having performed a neurology rotation during medical school.

Conclusion The prevalence of neurophobia in this Australian cohort of medical students and junior doctors is consistent with previous findings from around the world. This concerning finding requires further examination into the contributing factors in order to create trials of targeted interventions in order to resolve this.

Objectives Neurological disorders are the leading cause disability in Australia and the world. Combating the perceived difficulty of neurology or ‘neurophobia’ and improving physician education is a key component in addressing this problem. We aim to conduct the first study to identify whether neurophobia exists in medical students and junior doctors in an Australian population and try to identify factors that may contribute to this in this population.

Objective To determine reasons for adult patients with drug-resistant focal epilepsy who undergo presurgical evaluation not proceeding with surgery and identify factors that influence this decision.

Methods We analyzed demographic, imaging and electroclinical data on 617 consecutive patients brought to the Queen Square presurgical epilepsy MDT between January 2015 and December 2019. Multivariable logistic regression was performed to identify predictors of not proceeding with surgery, using comparative data from a prospectively-followed cohort of individuals who had epilepsy surgery at the same centre over an identical 5-year period.

Results A definitive decision not to proceed with surgery was made in 315 (51%) cases. Common reasons behind this were an inability to localise the epileptogenic zone (n=104), multifocal epilepsy (n=74) and patients’ decisions not to proceed with intracranial EEG (n=50) or surgery (n=39). Learning disability (OR: 2.35; 95% CI 1.07-5.16), normal MRI (OR: 6.68; 95% CI 3.71-12.05), extratemporal epilepsy (OR: 2.93; 95% CI 1.82-4.71) and unilateral seizure onset zones (OR: 6.68; 95% CI 3.71-12.05) were independent predictors of not having surgery. Probability of having surgery in those with normal MRI and extratemporal epilepsy was <10%. Those who did not proceed to surgery resided in more deprived socio-economic areas (median deprivation decile 40-50% vs 50-60%, p<0.05).

Conclusions Although underutilized, epilepsy surgery is only appropriate for selected individuals with drug-resistant focal epilepsy. A predictive model based on demographic, imaging and electroclinical data can help determine those unlikely to be suitable for surgery and aid the decision to refer for more extensive or invasive evaluation.