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doi: 10.1192/bjo.2023.215

Aims. 1) To compare blood brain barrier (BBB) permeability between AD and controls. 2) To examine the relationship between BBB permeability and cognitive decline in AD. 3) To examine the relationship between BBB permeability and peripheral markers of inflammation.
Methods. This pilot study combines the use whole brain DCE-MRI, with measures of peripheral inflammation in serum and urine. This is a clinical cohort study with longitudinal and cross-sectional arms, involving n = 15 AD and n = 17 age and gender matched controls. BBB permeability is measured using DCE-MRI and inflammation is measured by comparing serum cytokine and urine neopterin concentrations. AD participants attend three study visits over 12 months; control participants attend two over one week. Urinary neopterin analysis is being conducted in February 2023.The 12 month follow up visits complete in May 2023. Both neopterin and longitudinal cognitive assessment data will be included in the poster presentation in July.
Results. AD and control groups were well matched with no significant differences in demographics and multi-morbidity. We measured blood cytokine profiles for IL-6, IL-8, IL-2, IL-4, IL-1b, IL-10, IL13, IL-12p70-, TNF-alpha and INF-gamma. Only INF-Gamma was significantly different; higher in AD vs Controls (mean ± SD; 28.758 ± 90.226 AD, 3.773 ± 2.256 Control, P = 0.03). There were no significant differences in markers of neurodegeneration NfL and pTau-181, or vascular markers VCAM1, ICAM1, CRP and SAA between the groups. Ki is being calculated for overall whole brain, white matter, grey matter and hippocampus regions; an interim analysis showed no significant differences between the tissue categories, but analysis is ongoing.
Conclusion. There are currently no prognostic biomarkers that accurately predict decline in AD. We believe this pilot study will add to the literature about the utility and feasibility of DCE-MRI to measure BBB permeability. We hope that combining DCE-MRI with blood and urine biomarkers will further our knowledge of the pathophysiology of AD and help to develop minimally invasive biomarkers for identifying patients with AD, including those who are at risk of faster progression.

Abstracts were reviewed by the RCPsych Academic Faculty rather than by the standard *BJPsych Open* peer review process and should not be quoted as peer-reviewed by *BJPsych Open* in any subsequent publication.

Factors Affecting Compliance for Patients Post First Episode Psychosis

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doi: 10.1192/bjo.2023.216

Aims. Psychosis is a symptom of various health disorders characterised by hallucinations and delusions. Medication and appointment compliance amongst sufferers of psychosis remains a major issue. The aim of this study is to explore factors affecting compliance to inform interventions for improving service quality.
Methods. A rapid systematic review was conducted on PubMed. Following screening, these papers were extracted and assessed using the hawker tool. 161 papers were identified with a search criterion and 33 were screened after removing non- English records, paid articles and pre-2015 papers. Abstracts of 33 papers were screened and 9 studies were looked at in detail.
Results. 33 papers were identified after establishing a search criterion, from this 9 progressed to the inclusion stage. After using the Hawker tool, the quality of the papers averaged 32.8/36 and several significant factors were identified. The most significant factors that affect compliance are: insight, type of treatment, early signs of psychosis, ethnicity, income and qualitative factors.
Conclusion. Various measures can be suggested to help improve medication and appointment adherence for service users. Improving insight through targeted-informative leaflets on medication available at first contact with the Psychiatrist or GP. More frequent medication reviews for select patient groups identified with a higher risk of non-adherence. Greater income assistance through food and travel vouchers or information on how funding can be accessed. Lastly, staff training on increasing insight for psychosis patients delivered through a 1-day course/e-learning module.

Abstracts were reviewed by the RCPsych Academic Faculty rather than by the standard *BJPsych Open* peer review process and should not be quoted as peer-reviewed by *BJPsych Open* in any subsequent publication.

TMS-EEG in the Investigation of Excitation-Inhibition Imbalance in Psychosis and Cognition

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doi: 10.1192/bjo.2023.217

Aims. Transcranial Magnetic Stimulation (TMS) is an in-vivo, non-invasive, and safe method that probes neurophysiological properties associated with cortical glutamatergic (excitatory) and GABAergic (inhibitory) neurotransmission. The combination of TMS with Electroencephalography (EEG) allows us to measure TMS-evoked cortical responses directly from brain activity and it is uniquely placed to elucidate in-vivo cortical Excitatory/Inhibitory processes. Schizophrenia has been associated with Excitation/Inhibition (E/I) imbalance. Cognitive impairment, which is almost ubiquitous in schizophrenia, has been linked with the E/I abnormalities observed in schizophrenia. Among the TMS-EEG evoked potentials (TEPs), the N100 is thought to reflect activation of inhibitory GABA-B cortical circuits and has been associated with attentional processes in healthy individuals, attention deficit hyperactivity disorder (ADHD) and depression. Our aim was to investigate the cortical processes related to the generation of N100 after motor cortex stimulation and its association with attention measures in patients with schizophrenia and healthy controls.
Methods. TEPs were recorded following application of 150 TMS pulses at 90% of resting motor threshold on two brain sites, i.e., left primary motor cortex (M1) and dorsolateral prefrontal cortex (DLPFC) in stable patients with schizophrenia (n = 9) and healthy controls (n = 9). Region of Interest (ROI) analysis was performed to calculate the regional average of the N100 peak amplitude in

https://doi.org/10.1192/bjo.2023.216 Published online by Cambridge University Press