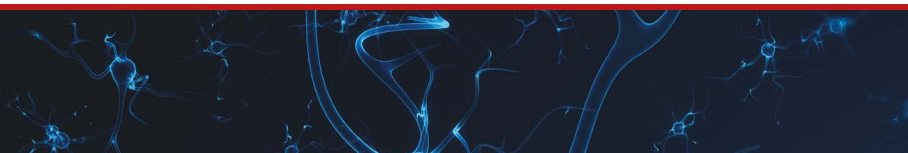
Parallel Session 5:
Acute Neurology/QST/Infection

Fri 8 May, 11:30 - 12:30

Hall 5

1. Risks of neuropsychiatric disorders after hospitalisation with an infection: A multi-cohort study across body systems: **Patrick Oliver**
2. The Clinical Spectrum of Immune Checkpoint Inhibitor Encephalitis: **Clara Tierney**
3. Substance use disorder in recreational nitrous oxide users: Real-world evidence from an online forum: **Safiya Zaloum**
4. Right Patient, Right Pathway: Consultant-Led Neurology Referral Management Outcomes from a UK Tertiary Centre: **Sanjida Chowdhury**
5. National Immuno-Oncology Neurotoxicity Advisory Group: A 12 Month Review: **Clara Tierney**
6. Patient Perspectives on Patient-Initiated Follow-Up in a Neurology Service: **Wint Nandar Hein**



Risks of neuropsychiatric disorders after hospitalisation with an infection: A multi-cohort study across body systems

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Background: Severe infections have been associated with post-acute neurological and psychiatric sequelae, but it remains unclear whether these risks generalise across infections affecting different body systems, how infection–disorder associations vary, and whether risks differ by age.

Methods: Using electronic health records from the TriNetX US Collaborative Network (>100 million patients), we conducted propensity score–matched analyses comparing hospitalisations with infections affecting 10 body systems with hospitalisations for non-infectious causes. From 1 month to 2 years post-admission, we assessed risks of 13 neurological and psychiatric disorders, summarised using restricted mean time lost, absolute risk differences, and infection specificity via age-stratified network meta-analysis.

Results: Across 55 pairwise studies (>1 million infection-related hospitalisations), infections were followed by increased risks of most neurological and psychiatric outcomes compared with non-infectious admissions. Infectious encephalitides showed the highest relative risks, while cognitive deficits showed the largest absolute risk increases. Disorders clustered by shared infectious risk profiles, suggesting convergent pathophysiology. Risks were present across all ages but were substantially higher in adults than in children

Interpretation: These findings show that hospitalised infections across body systems confer heterogeneous risks to neurological and psychiatric health, particularly in adults, support mechanistic studies to clarify infection-disorder pathophysiology, and inform future pandemic preparedness.

The Clinical Spectrum of Immune Checkpoint Inhibitor Encephalitis

Tierney C[1], Schroeder B[2,3], Vonberg F[4,5], Larkin J[6], Okines A[7], Mencel J[8], Flynn M[9], Mallon D[10], Willis M[2,3], Carr A[4,5]

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Background: Immune-related central nervous system toxicity represents a rare, serious and potentially fatal complication of immune checkpoint inhibitor therapy in cancer patients.

Objective: To categorise the spectrum of immune-related central nervous system adverse events to provide diagnostic, therapeutic and prognostic guidance.

Results with case examples:

Type 1: Subacute-onset cortical dysfunction with gait apraxia, language and executive dysfunction and stimulus sensitive myoclonus; cellular CSF, normal MRI. Good response to corticosteroid monotherapy; monophasic.

Type 2: Subacute-onset, multifocal neurological deficits with T2 hyperintensities on MRI. Often antibody positive (AQP4, MOG, NMDAR, LgI1); cellular CSF. Some response to corticosteroids, good response to PLEX. Often steroid dependent, benefit from maintenance immunosuppression (Mycophenolate or Rituximab).

Type 3: Stuttering or hyperacute onset vascular territory deficit(s). Acellular CSF, MRI -multifocal vascular insults with enhancing vessel walls. Responsive to immunosuppression as per CNS vasculitis (steroids + Cyclophosphamide +/- Rituximab +/- PLEX).

Type 4: Progressive, immunosuppression-refractory recognisable CNS paraneoplastic syndrome; acellular CSF +/- anti-neuronal antibodies, MRI normal or progressive focal atrophy.

Type 5: Systemic inflammatory response +/- encephalopathy +/- seizures. Acellular CSF, normal MRI brain. if no improvement with corticosteroids, Tocilizumab can be helpful.

Conclusion: Clinical heterogeneity complicates recognition and management with need for improved phenotypic classification and treatment guidance.

Substance use disorder in recreational nitrous oxide users: Real-world evidence from an online forum

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Introduction: Health harms due to recreational nitrous oxide (N_2O) use are increasing, particularly N_2O-induced myeloneuropathy. Current treatment guidelines rely on discontinuation of use. However, the addictive nature of N_2O is poorly understood, with little support available to help individuals reduce consumption. To aid understanding, we aimed to gather evidence on the presence of substance use disorder (SUD) amongst individuals recovering from N_2O use.

Methods: Utilising publicly available data from two Reddit forums, r/nitrousharmsupport (n=1,325 posts) and r/nitrousoxiderecovery (n=2,728 posts), six months of posts (07/10/2024 - 07/04/2025) were mapped to the 11 DSM-5 SUD criteria. Two independent researchers determined whether posts met criteria, with a third resolving any conflicts.

Results: 4,005 comments posted by 520 unique accounts were analysed. 431/4005 (10.8%) showed evidence of 'impaired control', 156/4005 (3.9%) 'risky behaviours', 143/4005 (3.6%) 'social impairment', and 95/4005 (2.4%) 'pharmacological criteria'. 145/520 accounts demonstrated indicative SUD; 87/145 (60.0%) were mild, 37/145 (25.5%) moderate, and 21/145 (14.5%) severe.

Conclusions: Forum content supports selected DSM-5 SUD criteria, particularly from the 'impaired control over substance use' category, with limited evidence for other categories. Targeted prevalence studies are required to understand the scale of N_2O misuse, profiles of SUD amongst N_2O users, and to guide care provision.

Right Patient, Right Pathway: Consultant-Led Neurology Referral Management Outcomes from a UK Tertiary Centre

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Introduction: ABN recommends active neurology referral management (RM) to optimise patient care by directing referrals to the most appropriate pathway and improving timeliness, effectiveness and appropriateness of specialist input. RM can reduce waiting times by providing primary care with rapid access to specialist advice, strengthening shared decision-making and avoiding unnecessary outpatient activity—ensuring patients who truly require neurologist review are prioritised.

Methods: At QMC, Nottingham, GPs submit electronic neurology referrals via the national e-Referral Service (eRS). Referrals are reviewed by a Consultant Neurologist and triaged to: (i) face-to-face clinic appointment, (ii) telephone/video consultation, or (iii) return to referrer with specialist advice. We audited 300 primary care neurology referrals submitted between April 2023 and May 2024 using NUH electronic patient record (EPR) and eRS data. Outcomes included triage disposition, response time, secondary-care investigations, re-referral rate and mortality within 12 months.

Results: Of 300 referrals, 39% were returned with specialist advice, 20% redirected to telephone/video consultation and 41% booked for face-to-face assessment. Among returned referrals, 17% had secondary-care investigations arranged and 13% were re-referred. No deaths were documented within 12 months.

Conclusion: Neurology RM at QMC demonstrates ABN-aligned triage, delivering timely consultant-led guidance and supporting appropriate access to neurology services.

National Immuno-Oncology Neurotoxicity Advisory Group: A 12 Month Review

Tierney C[1], Vonberg F[2,3], Schroeder B[4,5], Key R[6], Willis M[4,5], Shaw H[7,8], Young K[9], Olsen-Brown A[10,11], Carr A[2,3]

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Background: How we provide timely, informed multi-specialty input in the management of neurotoxicity of cancer immuno-therapies is a clinical and service delivery challenge particularly given the heterogeneity and acuity of these manifestations.

Objective: To describe the activity and referral patterns of a UK-wide multi-speciality service providing advice on suspected immuno-oncology neurotoxicity.

Results: From January 2025, at monthly and then fortnightly on-line meetings, 38 patients were discussed; 26% female, medial age 68 years.

Referrals originated from oncology (61%), neurology (21%), intensive care (5%) and other specialties (13%). 32% of referrals were from centres within London, 68% from centres across the UK. Advice on diagnosis (34%), management (47%), rechallenge (8%) and pre-treatment risk assessment (11%) was sought. There was diagnostic consensus for IO-neurotoxicity in 59%, excluded in 29% and indeterminate in 12%. Treatment changes were suggested in 100% with continuation of IO therapy supported in 13%. Outcome and user satisfaction data will be presented.

Conclusion: A National MDT facilitates consistent, expert diagnosis and management of immune checkpoint inhibitor related neurological toxicity across a national healthcare framework.

Patient Perspectives on Patient-Initiated Follow-Up in a Neurology Service

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Background: Patient-Initiated Follow-Up(PIFU) is increasingly adopted within neurology services at East Kent Hospitals University NHS Foundation Trust to improve patient autonomy and service efficiency. Clear patient understanding of the PIFU pathway is essential for safety and effectiveness. This quality improvement project explored patient perspectives on understanding, confidence, and satisfaction with neurology PIFU.

Methods: A feedback survey was conducted among the neurology patients with active PIFU pathway between January 2024 and July 2025. Fifty of 101 contacted patients participated. The survey assessed understanding of the PIFU, confidence in when and how to request follow-up, satisfaction with the service, and waiting time for an appointment where applicable. The project was approved by Trust Information Governance as part of a quality improvement initiative.

Results: Twenty-one patients (42%) reported receiving clear information about PIFU, with good understanding and confidence in accessing follow-up. Satisfaction in this group was high (mean score 4.32/5). Two patients had used the pathway, receiving appointments within one to six weeks. Twenty-nine patients (58%) reported poor understanding or lack of written information, attributed to inconsistent terminology in clinic letters or not receiving letters.

Conclusion: Standardised and clear communication regarding PIFU is essential to improve patient understanding, satisfaction, and safe pathway implementation.