

## Encephalitis Conference 2025

Wednesday 3<sup>rd</sup> and Thursday 4<sup>th</sup> December 2025

Royal College of Physicians, London, UK and remotely

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Today, we are delighted to welcome **531** attendees from **80** different countries



As the largest encephalitis-focused meeting worldwide, the Encephalitis Conference 2025 brought together a vibrant international community of clinicians, researchers, and advocates for two days of scientific exchange and collaboration. Delivered in a hybrid format at the Royal College of Physicians in London and online, the conference welcomed over 531 delegates from 80 countries and showcased cutting-edge developments across infectious and autoimmune encephalitis, as well as related neurological disorders.

On the morning of 3<sup>rd</sup> December, the conference opened with welcome remarks from Prof Benedict Michael (Chair Scientific Advisory Panel, Encephalitis International & University of Liverpool, UK) and Prof Carsten Finke (Chair Conference Committee & Charité – Universitätsmedizin Berlin, Germany).

The first session began with two introductory lectures designed to provide delegates—particularly those new to the field—with a structured overview of infectious and autoimmune encephalitis. Dr Nicholas Davies (Chelsea and Westminster, Charing Cross, and the Royal Marsden Hospitals, London, UK) delivered a clinical introduction to acute infectious encephalitis (IE) in adults, covering key aspects of incidence, outcome, diagnosis, mimics, testing, treatment, and management. This was followed by Dr Sophie Binks (Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UK), who focused on the surface antibody-mediated autoimmune encephalitis (AE), outlining antibody targets, testing approaches, the five common AEs, and future directions.

A dual-format clinical case presentation followed, offering educational insights through interactive exploration of real clinical scenarios. Dr Nicholas Davies and Dr Emer O'Connor (Imperial College Healthcare NHS Trust, UK) presented a case of measles inclusion body encephalitis, underscoring the importance of functional immunity assessment in immunosuppressed individuals, while Dr Matteo Gastaldi (Neuroimmunology Research Unit, Pavia, Italy) presented a primary central nervous system lymphoma, revealing the diagnostic pitfalls in AE.

The “How to Get Your Grant or Fellowship” workshop returned as a highly anticipated feature, with Prof Tom Solomon CBE (The Pandemic Institute, Academy of Medical Sciences & University of Liverpool, UK), Assoc Prof Deanna Saylor (UNC School of Medicine, USA), and Dr Saif Huda (Walton Centre Foundation Trust & University of Liverpool, UK) sharing practical advice for early-career researchers and clinicians worldwide, drawing on their own career trajectories. Topics included strategic grant planning and effective scientific writing, navigating unpredictable research careers with perseverance through rejection, and common pitfalls that undermine grant and fellowship applications.

The afternoon featured a data blitz session chaired by Prof Carsten Finke, Dr Sophie Binks, and Dr Thomas Pollak (Kings College London, UK). Fourteen speakers from 7 countries delivered brief, focused presentations showcasing a broad spectrum of emerging research. Topics included morphological brain changes in anti-leucine-rich glioma-inactivated 1 encephalitis (LGI1E); cerebrospinal fluid (CSF) lipidome for the diagnosis of central nervous system infections; CSF proteomics in AE; intrathecal and peripheral molecular profiling of paraneoplastic neurological syndromes; pathogen detection using metagenomic next-generation sequencing in paediatric febrile coma; neuronal network changes in an in vitro model of seizures in herpes simplex encephalitis (HSE); structural and microstructural brain changes in anti-N-methyl-D-aspartate receptor encephalitis (NMDARE) and multiple sclerosis overlap syndrome; long-term symptoms and management in paediatric NMDARE; clinical and paraclinical features of autoimmune brainstem encephalitis; intensive care unit complications in AE; development of a patient reported outcome measure for IE; structural brain complexity changes in NMDARE; autoimmunity detection using indirect immunofluorescence in catatonia; and a new preclinical MAM/Pilocarpine rat model of AE-associated epilepsy (AEAE).

The first day concluded with poster presentations and judging, featuring 43 posters from 41 researchers across 23 countries, followed by a drinks and networking reception.

Day two opened with greetings from Prof Benedict Michael and Dr Ava Easton (CEO Encephalitis International & University of Liverpool, UK), who also chaired the first session.

The first keynote lecture was delivered by Prof Romana Höftberger (Medical University of Vienna, Austria), who presented neuropathological findings across multiple intracellular and surface antibody-mediated neurological diseases, explaining their distinct underlying pathomechanisms and corresponding treatment responses. She also illustrated how neuropathology can contribute to guiding appropriate future therapeutic strategies.

In the next talk, Dr Bryan Ceronie (Oxford Autoimmune Neurology Group, University of Oxford, UK) identified LGI1-reactive long-lived plasma cells in the bone marrows of patients with LGI1E, suggesting that the bone marrow serves as a source of ongoing autoantibody production and may underlie persistent disease activity and relapse risk. Next, Dr Marianna Spatola (IDIBAPS, University of Barcelona & Caixa Research Institute, Spain) profiled herpes simplex virus 1 (HSV1) antibody responses in patients with HSE, revealing compartmentalized antibody response within the brain and enabling the prediction of subsequent brain autoimmunity.

Dr T.M. Bienfait (Erasmus MC University Medical Centre, The Netherlands) then reported preliminary CSF cytokine data, identifying tumour necrosis factor receptor 2 and its associated immunological pathways as potential prognostic markers, with implications for new targeted therapies in NMDARE. Closing the first session, Dr Ashok Kumar Pandey (ICMR-Regional Medical Research Centre, Gorakhpur, India) described distinct extents, patterns, and domains of neurological sequelae among pediatric survivors of Japanese encephalitis and scrub typhus encephalitis in Northern India. He further highlighted the urgent need for post-acute rehabilitation pathways, community-based support, and survivor follow-up programs in endemic regions.

The second session was chaired by Dr Nicholas Davies and Prof Sarosh Irani (Mayo Clinic, USA). Opening the session, Dr Andreas Pilz (Pfizer Corporation Austria) delivered an invited guest lecture summarizing the infection risk for tick-borne diseases, the epidemiology of tick-borne encephalitis (TBE) and Lyme borreliosis, the clinical manifestations and diagnostic confirmation of TBE, the effectiveness and impact of TBE vaccination, and the associated public health challenges.

Subsequently, Dr Tobias Baumgartner (University Hospital Bonn, Germany) reported seizure outcomes and associated clinical and paraclinical factors in an international multicenter study of patients with LGI1E presenting with seizures. He further proposed that patients achieving six months of seizure freedom should be diagnosed as having acute symptomatic seizures, given the low risk of seizure recurrence.

Dr Adam Al-Diwani (University of Oxford, UK) also presented an international multicenter study revealing the distinct psychopathology of NMDARE compared with primary psychoses. He illustrated that NMDARE is characterized by a rapid-onset, complex, and dynamic neuropsychiatric phenotype, accompanied by overt cognitive dysfunction and a predominance among younger individuals.

Continuing the session, Dr Tom Miller (UCL, UK) investigated autobiographical amnesia using representational similarity analysis of functional magnetic resonance imaging in patients with LGI1E, demonstrating that hippocampal damage impairs mnemonic representational distinctiveness and stability within a limited neural network. Next, Dr Marie Rafiq (Toulouse University Hospital, France) showed that the cognitive profile of autoimmune cerebellitis is characterized by prominent executive and attentional deficits, highlighting the importance of careful cognitive screening and the need for systematic prospective studies.

Before lunch, Miss Sarah Boardman (University of Liverpool, UK) showed, using in vitro blood-brain barrier (BBB) models, that HSV1 causes a dose-dependent disruption of BBB integrity, that HSV1-infected astrocytes produce interleukin-6 and cause a larger impact on BBB integrity when co-cultured with endothelial cells, and that interleukin-6 blockade preserves BBB integrity following exogenous interleukin-6 exposure.

In the afternoon, the third session was chaired by Dr Matteo Gastaldi and Prof Tom Solomon CBE. Dr Noline Schiess (World Health Organization) delivered the second keynote lecture on the WHO technical brief on encephalitis launched in 2025, introducing its target audience, methods, and key actions related to diagnostics, access to medicines, and coordinated health and social care. She also outlined the global burden, action plan, mandates, and status report with relevance to encephalitis, and highlighted the key role of Encephalitis International in collaboration with WHO.

In the subsequent talk, Dr Marta Duda-Sikula (Wroclaw Medical University, Poland) presented long-term psychosocial outcomes in patients with NMDARE and their caregivers across the intrapersonal, interpersonal, and healthcare system domains, providing qualitative insights into the subjective experience of symptom progression and highlighting the need for dedicated psychosocial support.

Dr James Marsh (University of Oxford, UK) virtually presented a systematic review and meta-analysis showing that psychiatric and behavioural sequelae after encephalitis are common and persistent across aetiologies, with similar symptom profiles between AE and IE. He emphasized the need for routine psychiatric assessment, integrated neuropsychiatric care, and more prospective, standardised, and interventional research.

The final session of day two was chaired by Prof Carsten Finke and Assoc Prof Kiran Thakur (Columbia University, USA). Dr Juliette Brenner (Erasmus University Medical Centre, the Netherlands) introduced the development of the PROSE score, a newly validated 40-item patient-reported outcome scale for encephalitis and demonstrated its robust psychometric performance in patients with NMDARE, LGI1E, and anti-contactin-associated protein-like 2 encephalitis.

Delegates then took part in the NeuroQuiz, a light-hearted and interactive activity featuring three clinical cases—cytotoxic T-lymphocyte-associated protein 4 deficiency, cytomegalovirus encephalitis, and rabies—presented by Prof Sarosh Irani, Dr Anlys Olivera (Columbia University, USA), and Dr Stephen Ray (University of Oxford, UK). The NeuroQuiz fostered active participation from early-career delegates while broadening diagnostic perspectives and reinforcing background knowledge.

The final invited guest lecture was delivered by Prof Tom Solomon CBE, who presented the EAN-ESCMID guidelines for the diagnosis and management of infectious encephalitis in adults. Using a case-based approach, he illustrated key clinical questions covering clinical features, aetiology-specific risk factors, lumbar puncture, multiplex CSF polymerase chain reaction testing, brain biopsy, imaging, electroencephalography, aciclovir treatment, corticosteroids, prophylactic antiepileptics, autoantibody testing in HSE relapse, and rehabilitation.

Phillippa Chapman (Encephalitis International) began the conference closing by sharing a video summarising Encephalitis International's achievements over the past year, which was warmly received by delegates. This was followed by the awards and call to action, delivered by Prof Benedict Michael and Dr Ava Easton. The Best Oral Presentation prizes were awarded to Dr Adam Al-Diwani and Miss Sarah Boardman. The Best Data Blitz Presentation award was presented to Dr Daniela Esser (University Hospital Schleswig-Holstein Kiel/Lübeck, Germany), while the Best Poster prize went to Ms Ana Vasconcelos (University of Coimbra, Portugal).

Prof Benedict Michael and Dr Ava Easton then thanked all speakers, chairs, organisers, sponsors, donors, and delegates whose collective efforts in ensuring the success of the conference. The meeting was distinguished by its broad scientific scope—spanning experimental models, clinical research, and translational studies—and by the depth of research contributions, from early-career researchers to senior international leaders. The closing remarks reaffirmed the mission of Encephalitis International and called for sustained partnership, advocacy, and support.

The next Encephalitis Conference will take place on 7th – 8th December 2026, hosted at the Royal College of Physicians, London, UK and online. Join the Encephalitis International community (<https://www.encephalitis.info>) through free professional membership to receive updates on research, campaigns, funding opportunities, and early-bird access to future conferences.

#### **Delegate Feedback – short summary:**

- 100% of delegates would recommend the conference to a colleague.
- 91.3% of delegates reported being better informed about encephalitis research.
- 91.2% reported being better informed about encephalitis outcomes for patients.
- 86.9% reported being more confident in their recognition and diagnosis of encephalitis.
- 81.5% reported being better informed about the resources and work of Encephalitis International.

Welcoming a record 531 healthcare professionals from 80 countries, this was inclusive of 219 participants from 49 low to middle income countries with 59% of our attendees being students or junior physicians and 56% of attendees being female. We had 82 abstract submissions with the conference holding 43 poster presentations, 16 oral presentations and one NeuroQuiz.



**Pictured, Dr Ava Easton, MBE, Chief Executive Officer, Encephalitis International; with the Encephalitis Conference 2024 bursary recipients from Nepal and Brazil.**

“One of the most meaningful aspects of the Conference was the opportunity to engage with cutting-edge research and to hear directly from leading experts working in different healthcare systems and research environments. This broadened my perspective on how encephalitis is approached globally, from diagnosis and acute management to rehabilitation and long-term follow-up. Overall, attending the Conference was a decisive and enriching experience that confirmed my desire to remain involved in encephalitis-related research and to contribute to bridging gaps between clinical care and research, particularly in the Brazilian context.” – Bursary Recipient, Brazil.

“Particularly impactful were sessions addressing the challenges of early recognition and timely treatment, which remain major barriers to improving outcomes in resource limited settings. The conference also provided excellent networking opportunities. I was able to interact with international experts in neuroinfectious diseases and neuroimmunology, exchange ideas with fellow early-career researchers, and explore opportunities for future collaborations. In conclusion, the conference bursary made it possible for me to participate in an exceptional scientific and educational event that would otherwise have been financially challenging. I sincerely thank Encephalitis International for their support and commitment to empowering early-career clinicians and researchers from LMICs. This experience has had a lasting impact on my professional development and will shape my future contributions to encephalitis research, education, and patient care.” – Bursary Recipient, Nepal.

Thank you to the sponsoring organisations: Arialys Therapeutics, Roche, Argenx, Valneva, Svar Wieslab, Euroimmun, ACNR, The Lancet Neurology, IBRO, Camino Communications Routledge, Thriplow Charitable Trust.