THE NEWSLETTER FOR PROFESSIONALS INTERESTED IN ENCEPHALITIS



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Japanese encephalitis Vaccination advice following Australia outbreak

PLUS

Encephalitis Conference 2022 HSV encephalitis trial reaches endgame Encephalitis Research Month

WWW.ENCEPHALITIS.INFO

Welcome to the latest edition of Connect Professional.

There is so much to be excited about with encephalitis research in the short, medium and long term – much of which you will read about over the next 20 pages.

We have potential life-changing research, at various stages of development, including a study which could revolutionise the treatment of herpes simplex virus encephalitis. The results of this study will be revealed at Encephalitis 2022, our annual Conference, at the end of the year (See Pages 6-9).

Speaking of the Conference, abstracts are now open for anyone who wants to share their work, with bursaries also available to professionals from low-to-middle income countries. Tickets are also available!

There is much work to be done in Australia following an outbreak of Japanese encephalitis which has tragically, at the time we went to press, caused four deaths and at least 41 cases.

In response, we mobilised to host a Japanese Encephalitis Masterclass in April and also write a vaccination statement which may be helpful to health professionals of all levels (See Pages 16 and 17).

Such was the success and positive response of the masterclass that our intention is to host more in the future (See Page 3). We would love to hear your thoughts on what areas to tackle.

Encephalitis will always be with us, that is the reality of the world in which we live. But there are things which can be done to prevent certain types of encephalitis, to improve treatment, after-care, and give medical professionals all the tools and information they need to treat and care for patients.

Over the next several years, you will be hearing a lot about our Global Impact Report (see Page 11).

This is an in-depth analysis on the global impact of encephalitis, and it is not hyperbole to say that it could save lives and improve the treatment and after-care of millions of people around the world.

We have already started discussions with potential stakeholders, including the World Health Organization, and although it is still early days, we are very hopeful that we can change the global landscape of encephalitis for the better.

It has the potential to help us take a giant leap towards achieving the mission of the Encephalitis Society and living in a world where encephalitis matters to everyone.

With best wishes,





Dr Ava Easton Chief Executive Encephalitis Society @encephalitisava **Dr Nicholas Davies** Chair - Scientific Advisory Panel Encephalitis Society

Encephalitis Society 32 Castlegate, Malton, North Yorkshire, England, YO17 7DT

www.encephalitis.info

t: +44 (0)1653 692583

e: admin@encephalitis.info

Registered charity number (England and Wales): 1087843

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Pictured overleaf: The mosquito-borne Japanese encephalitis virus has caused several deaths and infections in Australia



LATEST**NEWS**

Seven-year HSV encephalitis study nears the finishing line

Researchers are entering the final stages of a seven-year study which they hope will revolutionise the treatment of patients with herpes simplex virus (HSV) encephalitis.

The DexEnceph study recently recruited its final patient since December 2015 with the research team now working to complete the follow up and analyse their findings in time for the Encephalitis Conference in December.

Their aim is to discover whether the drug dexamethasone, which can reduce brain swelling, benefits HSV encephalitis patients in the longer term.

Professor Tom Solomon CBE, who led the study, said: "We know that dexamethasone reduces swelling, but what we want to know is whether it actually improves the outcome of patients with HSV encephalitis.

"Aciclovir is the standard treatment for anyone with HSV encephalitis. However, despite treatment, some patients are left with significant loss of memory, among many other difficulties.

"If we find that dexamethasone does improve the recovery of patients it could

revolutionise the treatment of HSV encephalitis."

In total, 94 patients were recruited for the study which was led by the Brain Infections Team at the University of Liverpool, in collaboration with the Walton Centre and the Encephalitis Society.

The research team divided the patients into two groups – one that received dexamethasone four times a day for four days and the other that did not.

Both groups also received aciclovir as part of their treatment.

Professor Solomon, who is President of the Encephalitis Society, added: "We are very grateful to everyone who has been involved in this study, from the patients, through to the study nurses, research and development departments, and chief executives at the 44 different sites across the UK.

"The final assessment of patient outcomes will be in six months' time and then we will write up the results and reveal our findings at the Encephalitis Conference at the end of the year in London.

"It will be fantastic to know whether dexamethasone really does improve



the outcomes for patients with herpes simplex virus encephalitis."

Dr Ava Easton, Chief Executive of the Encephalitis Society, said: "It was an exciting moment when this study was first announced several years ago and to be this close to the finishing line is an even better feeling. This is a treatment which we hope has the potential to change the lives of countless patients for the better around the world and underlines why we are determined to support encephalitis research wherever we can."

Encephalitis masterclasses: we need your suggestions

The Encephalitis Society is introducing regular online masterclasses on different aspects of brain inflammation.

It follows the recent success of a webinar on Japanese encephalitis which was organised in response to the recent outbreak in Australia.

Dr Ava Easton, Chief Executive of the Encephalitis Society, said: "The feedback to our Japanese encephalitis masterclass was very encouraging with participants from across the world and, crucially, Australia.

"Given its success, we are looking to host regular webinars focusing on different areas of viral and infectious encephalitis and covering topics such as diagnostics, treatment, recovery and so on.

"We would look to invite experts in the relevant fields of encephalitis to share their latest research and best practice and, hopefully, inform a wider audience of healthcare professionals of all levels.

"We would love to hear your thoughts on what areas we should cover in upcoming masterclasses, so if you have any strong feelings on future topics, please get in touch."

Email our Director of Operations, Alina Ellerington, with your suggestions at <u>alina@encephalitis.info</u>

LATEST**NEWS**

E UNIVERSITY TEACH



World Encephalitis Day reaches 58 million people

The ninth annual World Encephalitis Day reached over 58 million people when it returned on the 22nd February.

Our global awareness campaign was based on the theme of Code Red – the emergency alert code used in hospitals.

Dr Ava Easton, our Chief Executive, said: "We had at least 107 pieces of press coverage, so it was a very successful campaign in that respect. I was also very happy and grateful to see so many healthcare professionals around the world wearing something red and sharing their messages of support and awareness on social media."

In the month of February, we reached an estimated 2.5 million people through our social media channels with many millions more through traditional media.

An amazing £50,000 was also raised through BrainWalk – our challenge asking supporters to walk, jog, or run as many steps as possible during February.

Webinar: Viral encephalitis

Are you interested in learning more about the acute management of patients with viral encephalitis?

Diagnostics of Viral Encephalitis is a free webinar which covers the initial management of all patients with suspected encephalitis, up to the point of diagnosis, in an acute care setting, and the challenges of diagnostics.

It also presents the latest findings on the neurological manifestations of COVID-19.

The webinar is presented by Dr Benedict Michael, Reader and MRC Clinician Scientist at The NIHR Health Protection Research Unit for Emerging and Zoonotic Infection and an Honorary Consultant Neurologist at The Walton Centre.

The webinar was made possible thanks to an educational grant from bioMerieux.

To access the free webinar, visit our website.

Sign up to become a member

The Encephalitis Society provides information and support to patients affected by encephalitis worldwide. If you have a patient who you believe would benefit from our services, please ask them to sign up at <u>www.encephalitis.info/membership</u>

Refresh your neurology skills with the NeuroPRACTICE team

Are you looking to refresh your knowledge of neurology in clinical practice?

NeuroPRACTICE on Friday 24th June is an intensive one-day update on the latest in the management of common neurological presentations, focusing on the key skills required for clinical assessment, investigation and management of common neurological and neurosurgical presentations.

The course, organised by the University of Liverpool, will cover:

- Headache Clinical approach in primary and secondary care
- Tremors and Parkinson's disease
- Transient Neurological Symptoms

- 'High-Yield' aspects of the neurological examination
- Recognising and managing Functional Neurological Disorders
- Assessing and managing acute and chronic back pain

There will also be a final Q&A with the panel and an opportunity to ask "questions you have always wanted".

NeuroPRACTICE is aimed at primary and secondary care healthcare professionals and relevant to anyone seeing common neurological presentations, such as family doctors, adult nurse practitioners, emergency and junior doctors, and more.

It takes place at the Clinical Sciences Building, Aintree University Hospital, Liverpool on Friday, 24th June.

SIGN UP TODAY: www.liverpool.ac.uk/neurosciences-research-unit/neuropractice

LATEST**NEWS**



Can you help? LGI1-antibody encephalitis trial

Researchers are recruiting patients to help test a potential new treatment for LGI1-antibody encephalitis.

The international multi-centre trial is seeking to determine the efficacy, safety, and pharmacokinetics of rozanolixizumab in patients.

Professor Sarosh Irani, Professor of Autoimmune Neurology at the University of Oxford, said: "We are seeking patients with probable or proven LGI1 antibody encephalitis seizures who are either naive to immunotherapy or only recently treated with steroids.

"We want to determine whether rozanolixizumab is effective in treating seizures in patients with LGI1-antibody encephalitis. If so, it would offer patients additional opportunities to improve from this illness, potentially with fewer side-effects.

"This is an international multicentre trial and we really need it to successfully recruit in order to maintain future research funding for patient benefits."

The trial, a randomized, double-blind, placebo-controlled, multicentre, phase two study, is seeking patients aged between 18 and 89-years-old who have experienced at least two seizures a week during the screening period.

Recruitment is currently underway in the UK, USA, France, Germany, Italy, South Korea and Spain.

Meanwhile, many congratulations to Dr Irani, a member of our Scientific Advisory Panel, who has been given the title of Professor of Autoimmune Neurology by the University of Oxford.

The honour for Professor Irani follows a distinguished career as a consultant neurologist and clinician-scientist in the field of autoantibody mediated diseases of the nervous system.

Fittingly, Professor Irani found out about his conferment on the same day as the Encephalitis Conference on the 6th December 2021 and celebrated with his colleagues from the Scientific Advisory Panel that evening.

Congratulations, Professor Irani!

FOR MORE INFORMATION visit www.clinicaltrials.gov/ct2/show/NCT04875975

MRI scan trial to investigate encephalitis

Researchers at King's College London are developing advanced brain MRI scans to investigate autoimmune encephalitis in children and young people.

Dr Michael Eyre and colleagues are now seeking young people to help with their study by having MRI scans at St Thomas' Hospital, London.

"We will assess if these scans, combined with tests of memory, thinking, mental health and functioning in daily life, can help predict the outcome of autoimmune encephalitis for the individual person," said Dr Eyre, who is a Clinical Research Fellow.

The research team are looking for people aged 8-24 years with recent onset (in the last year) of NMDA receptor antibody encephalitis or antibody-negative autoimmune encephalitis. They are also looking for healthy volunteers in the same age range, without a diagnosis of encephalitis, to act as a control group.

Participants can listen to music or watch Netflix during the scan and will be asked to play games on an iPad to test their thinking skills.



Travel expenses are reimbursed and tokens worth up to £80 are offered to say thanks for taking part.

Dy Eyre added: "We hope our results will ultimately help doctors select the best treatment for each patient, improving the chances of controlling their symptoms sooner, shortening hospital stays and reducing the long-term effects on their lives."

Anyone interested in taking part in the study should contact Dr Eyre at <u>meyre@nhs.net</u>

Delegates from 50 countries attend Encephalitis 2021

The following is an abridged version of the full 2021 Encephalitis Conference report by Rhys Inward, Research Assistant, Genomic Epidemiology and Dara Science, University of Oxford, and Dr Ava Easton, Chief Executive of the Encephalitis Society. To read the full Encephalitis Conference 2021 report, visit www.encephalitis.info/encephalitis-2021-highlights

On December 7th, 2021, the Encephalitis Conference successfully took place in a hybrid format despite the COVID-19 pandemic. The conference was delivered to 314 delegates in-person and digitally from 50 countries, welcoming both researchers and healthcare professionals worldwide with an interest in a broad range of subjects related to encephalitis.

The conference, which was held at the Royal College of Physicians, featured 18 speakers from Spain, USA, Germany, Brazil, Cameroon, India, Senegal, France, and the UK, with sessions moderated by members of the Encephalitis Society's Scientific Advisory Panel.

The first keynote lecture was given by Professor Jerome Honnorat, Chair of Department of Neuro-Oncology at Hospices Civils de Lyon, France who presented on paraneoplastic encephalitis. He started by describing the association between autoantibodies and cancer and the classical paraneoplastic neurological syndromes (PNS). Subsequently, the associations between the closely related conditions of autoimmune encephalitis and PNS encephalitis were discussed, and their different pathophysiologies described. Professor Honnorat highlighted the need for the description of new syndromes and a better understanding of the incidence of paraneoplastic encephalitis. He also highlighted the importance of classifying the disease aetiology through antibodies, tumour markers and presence of cancer alongside the clinical

symptoms and the need for new and better codified treatments.

Invited guest speaker, Assistant Professor Deanna Saylor from The Johns Hopkins University School of Medicine, USA described her experience in developing neurological care and training in resource-limited settings. Professor Saylor discussed the high burden of neurological disorders globally and in lower middle income countries and highlighted that with an ageing and growing population these problems are only set to increase. Moreover, the disparities in postgraduate neurology training globally were stark, with opportunities being absent from many lower middle income countries. Through her experiences in creating a neurology training programme in Zambia, a lower middle income country, she demonstrated how the lack of human and physical resources can make developing a system of neurological care challenging. However, through her work she has shown, despite these challenges, that with an on-the-ground leader and in-person clinical training it is possible to create an effective neurological programme and improve care.

The second keynote lecture was given by Winifred Mercer Pitkin and Assistant Professor Kiran Thakur from Columbia University Irving Medical Center, USA. Professor Thakur presented how arthropod-borne encephalitides are becoming an increasing problem globally through anthropomorphic factors such





as encroachment onto vector habitats and global warming. This has significantly increased the area in which vectors associated with arthropod encephalitides can thrive. Furthermore, she described how many pathogens transmitted by ticks and mosquitos have common mechanistic pathways. Moreover, common host and pathogen immunogenetic factors have been associated with neurovirulence caused by these pathogens. This could pave the way for new potential therapeutic targets; however, more studies are needed to understand these immune pathways responsible for neuropathology.

Dr Ava Easton, CEO of the Encephalitis Society and Honorary Fellow, Dept. Clinical Infection, Microbiology and Immunology at the University of Liverpool began to close the conference with a video summarising how the Encephalitis Society has adapted to the COVID-19 pandemic and showcased events that took place in the past year despite this.

Dr Nicholas Davies and Dr Ava Easton presented the awards and prizes for best poster and best oral presentations:

Best poster for "The clinical diversity of anti-IgLON5 disease in the Dutch population" to Ms Yvette S Crijnen, from the Department of Neurology, Erasmus University Medical Center, Rotterdam, The Netherlands, (with colleagues Juliette Brenner, Inga Koneczny, Verena Endmayr, Catarina Alcarva, Nadine van der Beek, Chiara Glen, Ece Erdag, Daniëlle Bastiaansen, Agnita Boon).

Best oral presentation for "Dissecting CASPR2-antibody

encephalitis with patient derived CASPR2-specific monoclonal antibodies" to Dr Bo Sun, from the University of Oxford/ John Radcliffe Hospital, Oxford, UK and for "Encephalitis and autoimmune encephalitis in paediatric patients from Brazil" to Dr Renata Barbosa Paolilo from the Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCF-MUSP), São Paulo, Brazil.



Encephalitis 2022: Book your place

Tickets are now available for Encephalitis 2022.

More than 300 delegates from 50 countries joined us in-person and virtually in 2021 for two days of presentations and meetings based around the latest in encephalitis research.

Our annual conference looks at all aspects of encephalitis, including epidemiology, pathogenesis, diagnosis, treatment and outcomes in both children and adults, covering both infectious and autoimmune aetiologies.

There will be cutting-edge insights from global leaders in the field of brain inflammation covering hot topics, critical research questions, and approaches to the key clinical challenges informed by the latest research.

Keynote speakers for Encephalitis 2022 include Dr Stacey L Clardy, Associate Professor at the University of Utah and Salt Lake City, who will be talking about autoimmune encephalitis trials, and Professor Russell Dale, Professor of Paediatric Neurology, University of Sydney, who will be presenting on paediatric encephalitis.

Guest speakers include Professor Tom Solomon CBE, the President of the Encephalitis Society, who will be sharing the results of the DexEnceph Trial (see Page 3) and independent epidemiologist Dr Julia Granerod, one of the authors of our Global Impact Report (See Page 11).

Alongside our keynote and guest speakers will be some further oral and poster presentations from researchers on a range of topics surrounding encephalitis, with Satellite Meetings also planned for junior researchers who want to share their research with their more experienced colleagues.

Finally, Professor Sarosh Irani, the Chair of the Conference, will chair a debate titled: "This house believes that too many patients with psychiatric illness are being unhelpfully diagnosed with brain autoimmunity."

Debating the topic will be psychiatrists Dr Thomas Pollak, from King's College London, UK, and Dr Janet L Cunningham, of Uppsala University, Sweden.

The conference will be of interest to professionals from a range of backgrounds, including neurologists, psychiatrists, infec-

Encephalitis 2022 Royal College of Physicians or Virtually 30th November & 1st December www.encephalitis.info/conference



tious disease specialists, immunologists, intensive care and emergency medical staff, general practitioners, psychiatrists, psychologists, and other allied health professionals involved in the clinical care or research of encephalitis.

Dr Ava Easton, our Chief Executive, said: "Our conference is the go-to event for professionals of all levels who have an interest in encephalitis.

"We want to hear from anyone who wants to submit an abstract and share their research with world-leaders in the field of encephalitis. We are expecting some interesting topics to be explored and, of course, we would love for you to join us in London or virtually."

Воок Your Place www.encephalitis.info/conference

Abstracts are now open for anyone who wants to submit an oral or poster presentation. We are also inviting bursary applications from healthcare professionals in low-to-middle income countries who want to join us in London and will be launching our 2022 round of seed funding in June.

Call for Abstracts - now open!

We are now inviting abstracts for Encephalitis 2022 at the Royal College of Physicians, London - and virtually – on the 1st of December 2022.

Abstracts should be related to encephalitis and will be considered in any field or subject area with cash prizes for the winning presentations.

Participants interested in presenting an oral or poster presentation are invited to submit an abstract.

All abstracts will undergo peer review by the Scientific Panel Conference Sub-Committee and may be accepted for:

• ORAL PRESENTATION – refers to abstracts accepted for oral presentation at the podium on the 1st December.

• POSTER PRESENTATION – poster board presentation in the Poster Area and poster view in the Poster Booklet distributed to all participants. Posters may also qualify for a presentation during the data blitz Satellite Meeting on 30th November 2022. Abstracts must be submitted by 30th June 2022.

VISIT www.encephalitis.info/abstracts

Bursary

Medical or health professionals from low-to-middle income countries interested in attending Encephalitis 2022 are invited to apply for a bursary which will help cover their costs of attending the conference in London.

There are two bursaries available for our event at the Royal College of Physicians on the 30th of December and 1st December. Each bursary includes:

- financial assistance for travel and subsistence;
- three nights' accommodation in London;
- free entry to the Satellite Meetings on the 30th of December and the Conference itself on the 1st of December.

Applications for bursaries must be submitted by 15th July.

APPLY TODAY AT <u>www.encephalitis.info/conference-bursary</u>

Seed Funding - Watch this space!

Two grants of up to £10,000 are being offered to researchers from low-to-middle income countries, thanks to the Encephalitis Futures – International Research Seed Funding project.

Now in its fourth year, the fund from the Encephalitis Society is designed to encourage innovative research projects into encephalitis.

It is open to applicants of all levels, from medical students, junior doctors and early researchers, through to anyone returning to research, post-doctoral researchers and equivalent professionals from a low-to-middle income country.

"Our seed funding grants are ideal for any researcher who is looking to develop a smaller or pilot project and then go on to secure future funding for potential large-scale projects," said Dr Ava Easton, Chief Executive of the Encephalitis Society.

"Last year, we encouraged researchers from low-to-middle income countries to submit grant applications as it was felt the £10,000 on offer will go much further in the grand scheme of things.

"In the end, we had so many amazing applications from around the world and our Scientific Advisory Panel felt that we should continue along this route in 2022.

"We see this funding as being an important step in meeting our aim of improving the quality of life for all people affected by this often-devastating condition."

We will be emailing our Professional Membership with more information during Encephalitis Research Month in June.

Putting the spotlight on encephalitis research

Encephalitis Matters.

That will be our message to medical professionals when Encephalitis Research Month returns in June.

Our annual campaign, now in its fourth year, will be looking to encourage medical professionals from all over the world to join our ranks in support of our message.

Dr Ava Easton, Chief Executive of the Encephalitis Society, said: "Many professionals based outside of the United Kingdom with an interest in encephalitis do not seem to realise we are a resource that they, and their patients, can turn to in times of need.

"Our aim, beginning with Encephalitis Research Month, is to change this perception."

She added: "The best way to do this is by encouraging more neurologists, neuroimmunologists, neuropsychologists, neuropsychiatrists and others to join the Encephalitis Society.

"The more members we have, the stron-

ger our voice, the more we understand any shortfalls of support or information in different countries, and the better we can get our resources into the hands of the right medical professionals and their patients.

"I have had many conversations with colleagues based outside of the UK who do not realise the Encephalitis Society can engage interpreters, that patients from outside the UK can use our support service, or that our website can be translated into different countries with the click of a button.

"Joining us is also a two-way street – one where we can learn as much from you as, hopefully, you can learn from us.

"We are a global organisation and, no matter where you are in the world, we can support you and your patients."

Alongside our membership call to arms, the Encephalitis Society will also be turning to social media to share our information resources on different aspects of brain inflammation with healthcare professionals.

June is Encephalitis Research Month



Dr Easton added: "Encephalitis Research Month is our chance to shine a spotlight on important encephalitis research which is helping us to understand this devastating neurological condition, as well as resources and information which can be used by professionals and the patients in their care to aid their treatment and recovery.

"Please take the time during June to share any messages you may see from us and to encourage colleagues who may not be a member of the Encephalitis Society to join us because, as we all know, Encephalitis Matters."

For more about Encephalitis Research Month, visit www.encephalitis.info/research

Becoming a Member

Joining the Encephalitis Society is free and allows us to keep you up-to-date with the work that we do and the latest encephalitis related news, campaigns, appeals, events and research. Membership allows you to access a wide range of benefits, including:

- Research grants
- Bursaries to attend our events
- Discount rates to our annual Encephalitis Conference
- Priority access to our professional members newsletter
- Priority access to our annual Advances in Encephalitis. Research Guide
- Access the latest information and research from leading professionals
- Networking and development opportunities
- Support for your research projects
- Support for your patients and their families
- Training opportunities
- Opportunities to get involved in the production of our information
- Opportunities to present to our meetings and events

Follow the Encephalitis Society on social media and search for the hashtag #EncephalitisMatters for updates about Encephalitis Research Month

Sign up today by visiting www.encephalitis.info/professional-membership

Global Impact Report

Top level talks are underway following the release of a ground-breaking report which could save lives and improve the treatment and after-care of millions of people affected by encephalitis around the world.

Encephalitis: an in-depth review and gap analysis of key variables affecting global disease burden identifies a range of difficulties and solutions to the global impact of encephalitis.

The 160-page report, which has been authored by the Encephalitis Society and its scientists, was launched on World Encephalitis Day 2022.

Now, the Encephalitis Society, led by Dr Ava Easton, the report's senior author, has created a working group with key stakeholders which is looking at how to take the recommendations of the report forward. Their first meeting took place in March earlier this year and, since then, it has been agreed that the Encephalitis Society will support a meeting with a range of global stakeholders led by the World Health Organization in June to explore in more detail how the report's findings can be actioned.

Ava said: "We have taken the first steps on what is a very exciting journey. There is a determination among everyone involved to see the findings of this report through to the bitter end and change so many lives for the better."

The analysis, which has been nicknamed the Global Impact Report, looks at all aspects of encephalitis around the world, including prevention, surveillance, incidence, mortality, morbidity, neurology training, and patient support and information among many other aspects of the brain condition.

"This report identifies many global issues surrounding encephalitis," said Dr Easton. "But where a problem has been identified, so has a solution to counteract it.

"I really believe that by bringing together organisations around the world, we can change the global landscape of encephalitis for the better."

"I was surprised by the complete lack of neurologists in some parts of the world. Almost three-fifths of countries in Australasia, Oceania, mainly the Pacific Islands, and a fifth of countries in Africa reported no neurologists. That was one of the statistics which really hit home."

> Dr Julia Granerod Report Co-Author

Podcast Q&A

To mark the launch of the Global Impact Report, Dr Ava Easton, our Chief Executive, sat down with co-author Dr Julia Granerod to discuss the report, what it means, some of the research which stood out as well as what will be happening in the future.

The Encephalitis Podcast is available on our YouTube channel or can be downloaded from Spotify, Google Play, Apple or Podbean.

www.encephalitis.info/global-impact-report

For more information, visit

Meet the Authors

Who are the authors behind the **Global Impact Report?** The team, many, if not all, of whom will be familiar to readers, includes members of the Encephalitis Society Scientific Advisory Panel, Dr Ava Easton, our CEO, Alina Ellerington, our Director of Operations, Dr Julia Granerod, an independent epidemiologist, who has been involved with the Encephalitis Society for several years and Encephalitis Society volunteer, Rhys Inward, a Research Assistant, Genomic Epidemiology and Dara Science, University of Oxford.



Dr Julia Granerod epidemiologist



Rhys Inward Research Assistant University of Oxford



Dr Nicholas Davies Chair - Encephalitis Society Scientific Advisory Panel



Dr Benedict Michael Vice Chair - Encephalitis Society Scientific Advisory Panel



Professor Tom Solomon CBE President - Encephalitis Society



Dr Ava Easton CEO - Encephalitis Society

Surveillance of viral encephalitis in the context of COVID-19: A one-year observational study among hospitalised patients in Dakar, Senegal

The burden of encephalitis and its associated viral etiology is poorly described in Africa. Moreover, neurological manifestations of COVID-19 are increasingly reported in many countries, but less so in Africa.

Our prospective study aimed to characterise the main viral etiologies of patients hospitalised for encephalitis in two hospitals in Dakar. From January to December 2021, all adult patients that met the inclusion criteria for clinical infectious encephalitis were enrolled. Cerebrospinal fluids, blood, and nasopharyngeal swabs were taken and tested for 27 viruses. During the study period, 122 patients were enrolled. Viral etiology was confirmed or probable in 27 patients (22.1%), with SARS-CoV-2 (n = 8), HSV-1 (n = 7), HHV-7 (n = 5), and EBV (n = 4) being the most detected viruses. Age groups 40–49 was more likely to be positive for at least one virus with an odds ratio of 7.7.

The mortality was high among infected patients, with 11 (41%) deaths notified during hospitalisation. Interestingly, SARS-CoV-2 was the most prevalent virus in hospitalised patients presenting with encephalitis. Our results reveal the crucial need to establish a country-wide surveillance of encephalitis in Senegal to estimate the burden of this disease in the population and implement strategies to improve care and reduce mortality.

Kahwagi J., Seye A.O., Mbodji A.B., et al. (2022)

Surveillance of Viral Encephalitis in the Context of COVID-19: A One-Year Observational Study among Hospitalized Patients in Dakar, Senegal

Viruses. 14:5, 871. DOI:10.3390/v14050871 OPEN ACCESS https://creativecommons.org/licenses/by/4.0/ (Open access article distributed under the terms of the (CC BY licence)

Clinical features, investigations, and outcomes of paediatric limbic encephalitis: a multicentre study

OBJECTIVES

To describe the clinical presentation, investigations, management, and disease course in pediatric autoimmune limbic encephalitis (LE).

METHODS

In this retrospective observational study, from the UK Childhood Neuroinflammatory Disease network, researchers identified children from six tertiary centers with LE <18 years old between 2008 and 2021. Clinical and paraclinical data were retrieved from medical records.

RESULTS

Twenty-five children fulfilling LE criteria were identified, with median age of 11 years (IQR 8, 14) and median follow-up of 24 months (IQR 18, 48). All children presented with seizures; 15/25 (60%) were admitted to intensive care. Neuroimaging demonstrated asymmetric mesial temporal changes in 8/25 (32%), and extra-limbic changes with claustrum involvement in 9/25 (38%). None were positive for LGI1/CASPR2 antibodies (Abs), 2/25 were positive for serum anti-NMDAR Abs, and 2/15 positive for anti-Hu Abs; one died from relapsing neuroblastoma. Two children had serum and CSF anti-GAD antibodies. Initial immune therapy included steroids in 23/25 (92%), intravenous immunoglobulin (IVIg) in 14/25 (56%), and plasma exchange in 7/25 (28%). The commonest second-line treatment was rituximab in 15/25 (60%). Median duration of hospital admission was 21 days (IQR 11, 30). At last follow-up, 13/25 (52%) had refractory seizures and 16/25 (64%) had memory impairment. Six children (24%) had modified Rankin Scale (mRS) scores ≥3. There was no significant difference in mRS, or long-term cognitive and epilepsy outcomes in those who received rituximab versus those who did not.

INTERPRETATION

A diagnosis of autoimmune LE was associated with significant morbidity and adverse outcomes in this pediatric cohort.

Sabanathan S., Abdel-Mannan O., Mankad K., et al. (2021)

<u>Clinical features, investigations, and outcomes of paediatric limbic encephalitis: a multicentre study</u> Annals of Clinical and Translational Neurology. 9:1 (DOI: 10.1002/acn3.51494) OPEN ACCESS https://creativecommons.org/ licenses/by/4.0/

Anti-NMDAR encephalitis in the Netherlands, focusing on late-onset patients and antibody test accuracy

BACKGROUND AND OBJECTIVES

To describe the clinical features of anti-NMDAR encephalitis, emphasizing on late-onset patients and antibody test characteristics in serum and CSF.

METHODS

Nationwide observational Dutch cohort study, in patients diagnosed with anti-NMDAR encephalitis between 2007 and 2019.

RESULTS

One hundred twenty-six patients with anti-NMDAR encephalitis were included with a median age of 24 years (range 1–86 years). The mean annual incidence was 1.00/million (95% CI 0.62–1.59). Patients \geq 45 years of age at onset (19%) had fewer seizures (46% vs 71%, p = 0.021), fewer symptoms during disease course (3 vs 6 symptoms, p = 0.020), and more often undetectable serum antibodies compared with younger patients (p = 0.031). In the late-onset group, outcome was worse, and all tumours were carcinomas (both p < 0.0001). CSF was more accurate than serum to detect anti-NMDAR encephalitis (sensitivity 99% vs 68%, p < 0.0001). Using cell-based assay (CBA), CSF provided an unconfirmed positive test result in 11/2,600 patients (0.4%); 6/11 had a neuroinflammatory disease (other than anti-NMDAR encephalitis). Patients with anti-NMDAR encephalitis, who tested positive in CSF only, had lower CSF antibody titers (p = 0.003), but appeared to have an equally severe disease course.

DISCUSSION

Anti-NMDAR encephalitis occurs at all ages and is less rare in the elderly patients than initially anticipated. In older patients, the clinical phenotype is less outspoken, has different tumor association, and a less favorable recovery. Detection of antibodies in CSF is the gold standard, and although the CBA has very good validity, it is not perfect. The clinical phenotype should be leading, and confirmation in a research laboratory is recommended, when in doubt.

Bastiaansen A.E.M., de Bruijn M.A.A.M., Schuller S.L., et al. (2021)

Anti-NMDAR Encephalitis in the Netherlands, Focusing on Late-Onset Patients and Antibody Test Accuracy Neurology Neuroimmunology & Neuroinflammation. 22;9(2):e1127 OPEN ACCESS https://creativecommons.org/licenses/ by/4.0/

Defining Outcomes after Encephalitis

Van Den Tooren et al. (2022) identified a need for standardised outcome measures for encephalitis patients to facilitate the accurate interpretation of research data and performed a systematic literature review over six databases extracting key data, presented as a narrative summary.

Of the 35 papers and 3,133 patients included, thirty-seven outcome measures were used. Of these, a sole measure was developed for encephalitis. The most used outcome measures reviewed were the Glasgow Outcomes Score used in 46%, the Barthel Index used in 37%, the Euro-QoL-5D used in 35% and the modified Rankin Scale in 33%.

Most measures used were not validated for use in encephalitis and assessed a single category of sequalae using 5–8-point scales in which patients are rated as having minimal disability to death.

Only ten studies reviewed assessed patients for cognitive function, despite most studies assessing patients for physical disability. A vast majority of studies reviewed limited maximum follow up to one year, and only seven assessed mood as part of their outcomes.

This study identified a need for the development of a composite outcome measure for use in clinical practice and a core-outcomes set for use in research. In the meantime, the Liverpool Outcome Score was recommended for clinical use (as the only outcome measure identified that was developed for use in encephalitis).

Van Den Tooren H., Easton A., Hooper C., et al. (2022) How should we define a 'good' outcome from encephalitis? A systematic review of the range of outcome measures used in the long-term follow-up of patients with encephalitis Clinical Medicine Journal. 22: 2 (DOI: 10.7861/clinmed.2021-0505)

An algorithmic approach to identifying the aetiology of acute encephalitis syndrome in India: results of a four-year enhanced surveillance study

BACKGROUND

Annual outbreaks of acute encephalitis syndrome pose a major health burden in India. Although Japanese encephalitis virus (JEV) accounts for around 15% of reported cases, the aetiology of most cases remains unknown. We aimed to establish an enhanced surveillance network and to use a standardised diagnostic algorithm to conduct a systematic evaluation of acute encephalitis syndrome in India.

METHODS

In this large-scale, systematic surveillance study in India, patients presenting with acute encephalitis syndrome (ie, acute onset of fever with altered mental status, seizure, or both) to any of the 18 participating hospitals across Uttar Pradesh, West Bengal, and Assam were evaluated for JEV (serum and cerebrospinal fluid [CSF] IgM ELISA) per standard of care. In enhanced surveillance, JEV IgM-negative specimens were additionally evaluated for scrub typhus, dengue virus, and West Nile virus by serum IgM ELISA, and for Streptococcus pneumoniae, Haemophilus influenzae, Neisseria meningitidis, dengue virus, herpes simplex virus, and enterovirus by CSF PCR across five referral laboratories. In 2017, chikungunya and Leptospira serum IgM by ELISA and Zika virus serum and CSF by PCR were also tested.

FINDINGS

Of 10,107 patients with acute encephalitis syndrome enrolled in enhanced surveillance between Jan 1, 2014, and Dec 31, 2017, 5734 (57·8%) of 9917 participants with available data were male and 6179 (62·7%) of 9856 were children aged 15 years and younger. Among patients who provided a sample of either CSF or serum in enhanced surveillance, an aetiology was identified in 1921 (33·2%) of 5786 patients enrolled between 2014 and 2016 and in 1484 (34·3%) of 4321 patients enrolled in 2017. The most commonly identified aetiologies were JEV (1023 [17·7%] of 5786 patients), scrub typhus (645 [18·5%] of 3489), and dengue virus (161 [5·2%] of 3124). Among participants who provided both CSF and serum specimens, an aetiology was identified in 1446 (38·3%) of 3774 patients enrolled between 2014 and 2016 and in 936 (40·3%) of 2324 enrolled in 2017, representing a 3·1-times increase in the number of patients with acute encephalitis syndrome with an identified aetiology compared with standard care alone (299 [12·9%]; p<0.0001).

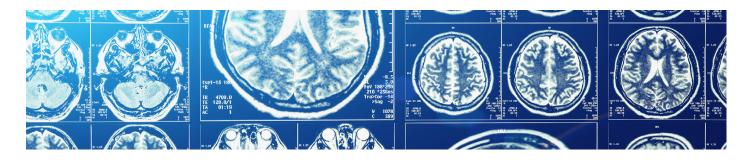
INTERPRETATION

Implementation of a systematic diagnostic algorithm in an enhanced surveillance platform resulted in a 3·1-times increase in identification of the aetiology of acute encephalitis syndrome, besides JEV alone, and highlighted the importance of scrub typhus and dengue virus as important infectious aetiologies in India. These findings have prompted revision of the national testing guidelines for this syndrome across India.

Vasanthapuram R., Hameed K.S., Desai A., et al. (2022) An algorithmic approach to identifying the aetiology of acute encephalitis syndrome in India: results of a 4-year enhanced surveillance study

Lancet Global Health. 10:5 e685-e693. (DOI:10.1016/S2214-109X(22)00079-1) OPEN ACCESS https://creativecommons.org/ licenses/by/4.0/

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Challenges for nurses in caring for patients with acute encephalitis

Gill et al. (2022) set out to examine the experiences of nurses caring for adult encephalitis patients, throughout their hospital stay, using a qualitative phenomenological methodology.

Eight nurses with experience of having nursed at least one encephalitis patient were recruited from a large, city centre UK teaching hospital. On selection of the participants, in-depth, semi-structured interviews were undertaken between October 2014 and August 2015. Interviews were transcribed in full by the researcher, read, indexed, summarised and developed into a theoretical framework over a five-stage process.

Two independent researchers with prior phenomenological experience separately coded a sample of the data to ensure validity and reliability of the findings. Four primary themes were identified during the data analysis: managing confusion, supporting relatives, frustration and obtaining appropriate rehabilitation for encephalitis patients.

Following the identification of these themes, key findings from the data collected demonstrated that the nurses lacked knowledge of encephalitis to enable them to confidently care for these patients, lacked the time to give these patients the level of care they required, and observed a lack of access to specialist neuro-rehabilitation for their encephalitis patients. These findings are in keeping with other evidence that has been reported in the context of patient confusion in other neurological conditions.

This study provided an exploratory foundation to examine the challenges of nursing encephalitis patients to high standards of care, highlighting a need for adequate staffing, training and access to rehabilitation.

Gill C., Griffiths M., Easton A., et al. (2022)

<u>Challenges for nurses in caring for patients with acute encephalitis: lack of knowledge, time and rehabilitation</u> *British Journal of Nursing. 31:1 (DOI: 10.12968/bjon.2022.31.1.40.*



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Japanese encephalitis: Vaccination statement

Following the outbreak of Japanese encephalitis in Australia earlier this year, the Encephalitis Society put together the following statement for anyone who wants to learn more about the virus, vaccination, and other prevention precautions which can be taken.

Please note: information may change at a fast pace so in addition to reading this statement we encourage you to visit the links at the end of this document for the latest developments.

Japanese encephalitis (JE) is a type of infectious encephalitis caused by Japanese encephalitis virus (JEV). The virus is found in pigs and birds and is transmitted by Culex mosquitoes which bite mainly during the night or just after sunset and which breed in water pools and flooded rice fields. JEV is the main cause of viral encephalitis in many countries of Asia and the pacific islands with an estimated 68,000 cases every year.

Endemic virus cases of JE in Australia have generally been sporadic. At the beginning of March 2022, health authorities in Australia were alerted by the presence of JE cases in the nation's eastern seaboard followed by the deaths and hospitalisation of several South Australians from this condition.

Australian Government Department of Health are monitoring the unfolding situation in Australia concerning the Japanese encephalitis virus (JEV). As of 4th May 2022, there were 41 human cases of JEV in Australia reported (28 confirmed, 13 probable) and sadly, four deaths.

www.health.gov.au/health-alerts/japanese-encephalitis-virus-jev/about

What does this mean for people who live in the affected areas?

The Encephalitis Society experienced a considerable increase in the request for information resources on JE.

During the first month of the outbreak, 15% of our website visitors were from Australia compared with 3% for the same period last year and our Japanese encephalitis page views have increased by 800%.

To meet this need for information, we put together the following consensus statement based upon the Australian Government Department of Health recommendations.

Vaccine recommendations

In Australia, JE has been declared a Communicable Disease Incident of National Significance.

Communicable Diseases Network Australia (CDNA) jurisdictional representative group has prioritised the following highest exposure groups for priority vaccination (mainland Australia, Torres Strait Islands and Tiwi Islands):

• people who work at, reside at, or have a planned non-deferable visit to a:

- piggery, including but not limited to farm workers and their families (including children aged 2 months and older) living at the piggery, transport workers, veterinarians and others involved in the care of pigs
- 2. pork abattoir or pork rendering plant

• personnel who work directly with mosquitoes through their surveillance (field or laboratory based) or control and management, and indirectly through management of vertebrate mosquito-borne disease surveillance systems (e.g. sentinel animals) such as:

- 1. environmental health officers and workers (urban and remote)
- 2. entomologists
- all diagnostic and research laboratory workers who may be exposed to the virus, such as persons working with JEV cultures or mosquitoes with the potential to transmit JEV; as per the Australian Immunisation Handbook.

According to the Australian Immunisation Handbook, there are two types of vaccine approved in Australia: Imogev and JEspect. For more information on types, doses and recommendation, contraindications, precautious and adverse effects, please read the complete guidance at

Get**The**Facts

www.immunisationhandbook.health.gov.au/vaccine-preventable-diseases/japanese-encephalitis

If you want to know if you should have a vaccine, contact your local health public authority

www.health.gov.au/health-topics/immunisation/immunisation-contacts#state-and-territory-immunisation-health-services

The priority groups will be periodically reviewed as surveillance data emerges.

Vaccine confidence

We are concerned that there are some people around the world who are reluctant to get vaccinated. We accept that people can be concerned about their health. However, we are also conscious that some concerns about vaccine safety are fuelled by fake news and information which is not evidence-based.

We also recognise that no medical intervention is completely risk-free but in the case of vaccinations it is important to understand that science and history have demonstrated that the significant benefits outweigh the very small, occasional risk.

Having the population at risk as categorised above immunised against JEV is critical to reduce deaths, illness and disability caused by the virus.

If you are concerned due to your personal circumstances (e.g., previous allergy, pregnant, breastfeeding, weakened immune system), your health care provider should give you more information.

If you have had encephalitis or are on treatments related to your encephalitis (for example immunosuppressive treatments) and are concerned, you should speak with the medical team involved in your care.

Other prevention precautions

In addition to taking vaccination (which can take up to 28 days to achieve immunity), people can also take immediate precautions measures such as wearing mosquito repellent, wearing long sleeves and trousers to avoid being bitten, using mosqui-

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toes' screens and nets, and ensuring their homes and communities are free from stagnant water where mosquitoes gather and lay their eggs.

How the Encephalitis Society help?

The Encephalitis Society is the only resources of its kind in the world that provides information and support for people affected by encephalitis, their families and professionals involved in their care, raises awareness of encephalitis, and conducts and supports research into the condition.

We have a dedicated section on our website where you can find up-to-date information on the condition and its after-effects. www.encephalitis.info/japanese-encephalitis-australia

We are here for you. If you are worried and want to chat to someone, call our support line on +44(0)1653 699599, email <u>support@encephalitis.info</u> or use our Chat Online button on www.encephalitis.info

Bibliography and other links

www.health.gov.au/health-topics/japanese-encephalitis

www.health.gov.au/resources/publications/cdna-advice-regarding-vaccination-against-japanese-encephalitis-virus

www.who.int/news-room/fact-sheets/detail/japanese-encephalitis

www.cdc.gov/vaccines/hcp/vis/vis-statements/je-ixiaro.html

www.ecdc.europa.eu/en/japanese-encephalitis

WOMENINSCIENCE

Women in Science

In a new ongoing feature for Connect Professional, we will be asking eminent female medical professionals to share their experiences of working in science. Our first interviewee is Professor Barbara Wilson OBE, President Emeritus of the Encephalitis Society.

Name:

Barbara A Wilson

Occupation:

Honorary Clinical Neuropsychologist

Where did you study?

First degree at Reading University (first class honours) 1975; M.Phil (clinical psychology) Institute of Psychiatry (University of London) 1977; Ph.D University of London 1984

When did you know you wanted to pursue a career in science?

During my time at Reading University 1975.

What is your area of expertise?

Brain Injury Rehabilitation.

How did you choose your field of study?

During my clinical training at the Institute of Psychiatry, I became fascinated with neuropsychology. When I first qualified, the best opportunity was working with children with developmental learning difficulties, so I took that job for two years and was taught that if these children did not learn, it was our responsibility to find a way to help them learn. This lesson stood me in good stead when I found a post in brain injury rehabilitation in 1979. I knew on my first day in this post that I would remain in brain injury rehabilitation for the rest of my career. This has indeed been the case.

What inspires you in the workplace?

Working with patients and their families and trying to solve their problems. It is the mixture of normality and abnormality that intrigues me.



What kind of prejudices, if any, did you have to face?

I seem to have been lucky and have not experienced much sexism but I am going to cite some examples from one of my books entitled "Reaching fulfilment as a woman in science" published in 2021 by Routledge. Most undergraduates in psychology are women but most psychologists in senior positions are men. In 2007, Fionnuala Murphy organised a meeting in Cambridge called 'Women in Science'. It happened because of a quinquennial (5 year) review of the Medical Research Council's Cognition and Brain Sciences Unit in Cambridge. At the review one of the people evaluating the past five-year work output of the staff there, was a woman, Susan Gathercole, who was later to become Unit Director, the one and only time a woman has been director. There were no female senior scientists attending the review as there were no female senior scientists then employed at the unit (although there were when I worked there and I was one of them). Susan Gathercole asked where the women were. It is unclear whether the male director, William Marslen-Wilson, understood the significance of the question but some of the more junior female staff, including my honorary 'adopted daughter', Jessica Fish did. She asked if I would speak at a one-day conference organised by Fionnuala Murphy. This was to be a meeting of former female senior scientists including some prestigious people including Dorothy Bishop, Karalyn Patterson, Bundy Mackintosh, Sophie

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Scott, Nilli Lavie, Elisabeth Hill and Anne Cutler. I spoke about my career and achievements including the founding of the Oliver Zangwill Centre for Rehabilitation in Ely and the centre in Quito, Ecuador, named after me. Another incident was to do with the Academy of Medical Sciences of which I was elected a fellow in 2001. Several years later, this academy organised a meeting in Birmingham called 'Women and the Glass Ceiling'. It was to feature women who had broken through the metaphorical glass ceiling and to say why they had succeeded. I was one of the women who agreed to speak. It was an interesting day and my talk was similar to the one I had given at the Cambridge meeting. At the end of the day, we were asked to give three tips for succeeding in science to the mostly young women in the audience. Whereas the others said things like find a good laboratory to work for and publish in high-impact journals, I suggested they should not be afraid to fight the system; secondly, to do what they feel passionate about and, third, find a supportive partner. I reminded the audience that our main purpose in life was not to further our careers but to work for the benefit of people with brain injury and their families.

In your opinion, which changes, if any, are needed in the scientific system to be more attractive to women in science and possible future scientists?

As seems the case with some members of parliament at the moment and the struggle women have in Afghanistan to obtain an education, some men appear to regard women as inferior so this has to change. In some ways, things have improved. I was never brought up to believe women were inferior, I went to a girls grammar school where we were expected to succeed. My husband of almost 60 years had a strong mother and three sisters so always saw women as powerful. My daughter feels I must have been unaware of sexism but I have rarely experienced it directly.

What advice would you give to people considering a career in science?

Follow your passion, fight for what you believe in and don't be afraid of the system.



Do you have anything else that you'd like to tell us about?

I come from a poor and disadvantaged background having a mother with learning difficulties, a bright but uneducated father and no support for pursuing education. Nevertheless, I have succeeded in becoming an internationally well known person in neuropsychological rehabilitation. Apart from my childhood days, I have mostly had a good life and good marriage. We both experienced tragedy when our beloved first born child, Sarah, died in a white water accident in Peru at the age of 36 years. This devastated us for a time and changed us irrevocably, probably for the better. We have a surviving daughter, Anna, a son, Matthew, four grandchildren and a great granddaughter. My husband was diagnosed with terminal cancer a year ago. His diagnosis has led to my forced retirement resulting in loss of income, a decline in many invitations to talk or see patients or publish papers, and an inability to contribute to research. I am now mostly a carer and I am left wondering if this affects men in the same way?



Published works

Professor Wilson has published 204 peer-reviewed papers, 124 chapters, 32 books and eight neuropsychological tests.

Several books are available from Routledge by visiting: <u>https://bit.ly/BarbaraWilson</u>

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- Be the first to hear about our research grant funding
- Free annual Advances in Encephalitis. Research Guide.
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- Networking and development opportunities.
- Support for your research projects.
- Support for your patients and their families.
- Training opportunities.



visit www.encephalitis.info/membership

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