Safety Alert 008/22

Issue date
16 December 2022

Distributed to:
Chief Executives
Directors of Clinical Governance
Director, Regulation and Compliance Unit

Action required by:
Chief Executives
Directors of Clinical Governance

We recommend you also inform:
Directors, Managers and Staff of:

- Emergency Departments
- Intensive Care Units
- Neurology
- Infectious Diseases
- Paediatrics
- General Medicine
- Public Health Units
- Nursing

Other relevant staff, departments and committees

Deadline for completion of action – within 24 hours of receipt

Expert Reference Group

Content reviewed by:
Chief Health Officer
Experts in Infectious Diseases

Clinical Excellence Commission
Email
Internet website
Intranet website

Review date
December 2023

Japanese Encephalitis Virus – Update for Clinicians

Situation

Japanese Encephalitis Virus (JEV) is a rare but potentially fatal cause of viral encephalitis. It is an RNA flavivirus spread by mosquitoes.

Prior to 2022, there was minimal risk of JEV infection in Australia outside of the Torres Strait. In early 2022, however, JEV was found for the first time in people, pigs, mosquitoes and other animals in NSW, Queensland, Victoria and South Australia. To date, 13 people in NSW have developed severe infections and a further two have died.

A serosurvey following the outbreak found that one in 11 people in five towns across western NSW had antibodies to JEV (excluding those who could have acquired antibodies to the virus through other exposures). People at highest risk of JEV infection are those who work at or reside on piggeries, handle mosquitoes, or spend significant periods of time outdoors, particularly near mosquito breeding areas such as standing bodies of water.

Assessment

- The incubation period for JEV ranges from 5-15 days after being bitten by an infected mosquito.
- Less than 1% of people develop a clinically significant illness.
- Symptoms may include fever, headache, myalgia, rash and diarrhoea.
- Severe disease is associated with acute encephalitis/meningoencephalitis. Neurological sequelae include focal deficits such as paresis, cranial nerve pathology and movement disorders. Seizures are common, particularly in children.
- Permanent neurological or psychiatric complications occur in 30-50% of cases with severe disease. The fatality rate can be as high as 30%.

Diagnostic Recommendations

All patients presenting with encephalitis/meningoencephalitis should have the usual investigations conducted, including cerebrospinal fluid (CSF) sampling, if safe and clinically appropriate to do so.

Where CSF is obtained, it should be tested for Herpes Simplex Virus (HSV) and other common causes of meningo-encephalitis by multiplex PCR and culture.

It is especially important to exclude bacterial meningitis and HSV as they are treatable conditions.

For both adults and children, in cases of suspected viral encephalitis/ meningoencephalitis where the causative agent remains unidentified, especially with acute and clinically consistent MRI/CT[1,2] brain changes, the following samples should be sent for analysis (serology/ PCR/ viral culture and sequencing) at the Institute of Clinical Pathology and Medical Research (NSW Health Pathology - ICPMR) at Westmead Hospital:

PTO

Blood

- Serum – (2-5 mL from children, 5-8 mL from adults) for acute and convalescent (3-4 weeks post onset) testing for Flavivirus and JEV IgM, IgG and Total Antibody (Ab)
- Whole blood (EDTA tube) for JEV PCR (+/- viral culture) on an acute sample - **AND**

CSF (at least 1 mL)

- Flavivirus/JEV IgM, IgG and Total Ab
- JEV PCR and viral culture **AND**

Urine (2-5 mL in sterile urine jar)

- JEV PCR and viral culture

Transport specimens at 4°C. Ensure request forms are appropriately labelled with clinical and epidemiological history, including symptom onset, vaccination, travel history and country of birth, to guide laboratory interpretation. Send urgently (same/next day) to ICPMR. Viral culture requires a Biosafety Level 3 laboratory.

Clinical Escalation

Please discuss any suspected cases with your local Infectious Disease physician. Infectious Disease physicians can seek further specialist advice by contacting the Clinical Microbiologist on call at NSWHP-ICPMR through the Westmead Hospital Switchboard **(02 8890 5555).**

Encourage prevention where practicable

1. **Preventing mosquito bites**

This includes the use of mosquito repellents, insecticide sprays, screens, bed-nets, vapour dispensing units (indoors) and mosquito coils (outdoors), wearing long, loose or permethrin impregnated clothing and removing any water-holding containers where mosquitoes may breed. Preventing mosquito bites also helps prevent against other mosquito-borne illnesses.

2. **Vaccination**

There are 2 JEV vaccines registered for use: Imojev, a live attenuated vaccine (single dose) for people 9 months and older and JEspect (also known as Ixiaro), an inactivated vaccine (2 doses) for those who are unable to receive live vaccines (immunocompromised or pregnant) or aged between 2 to 9 months of age. Due to supply constraints, the vaccine is currently prioritised to those at highest risk of exposure to the virus. For more information visit: Japanese encephalitis vaccination.

Required actions for the Local Health Districts/Networks

1. Distribute this Safety Alert to all relevant clinicians and clinical departments for awareness.
2. Be alert to Japanese encephalitis virus (JEV) infection in patients presenting with fever, headache, and new neurological signs.
3. For primary care services, offer vaccination to eligible patients. Vaccination can be given by primary care providers, Authorised Nurse Immunisers and pharmacists (see: JEV Vaccination). Vaccination can be facilitated by local Public Health Units.
4. Acknowledge receipt and distribution of this Safety Alert within **24 hours** to:
   CEC-MedicationSafety@health.nsw.gov.au

Footnotes

[1]The priority for JE diagnosis is for cases of suspected encephalitis/viral meningoencephalitis without another pathogen diagnosis. It is noted that the majority of JE infections are asymptomatic and that there may be other presentations including acute flaccid paralysis and arthralgia.

[2] Bilateral thalamic involvement on CT or MRI Brain is classical. Other areas which may be involved includes the basal ganglia, midbrain, pons and medulla.