ANRS 0629s DEMELE-JEV

(Information for researchers)

Title Diagnostics and surveillance of acute meningo-encephalitis among children in Cambodia with a focus on Japanese Encephalitis Virus

Headings	**Content**
In a nutshell	**Saphonn Vonthanak & Audrey Dubot-Pérès**
	Structure/teams : • UHS-University of Health Sciences, Phnom Penh, Cambodge • Hôpitaux Kantha Bopha, Phnom Penh, Cambodge • Hôpital Kantha Bopha, Siem Reap, Cambodia. • CDC-Communicable Disease Control Department, Phnom Penh, Cambodia • Institut Pasteur du Cambodge • UVE : Unité des Virus Émergents, Inserm 1207 Aix-Marseille Université, France. • SESSTIM-Santé Épidémiologie et Systèmes de Soins, Technologies et Marseille, France. • GHMI-Laboratoire de Génétique Humaine des Maladies Infectieuses Inserm UMR 1138, • MMMI-Laboratoire de Modélisation Mathématique des Maladies Infectieuses, Institut Pasteur de Paris, France.
	Start date/End date provisional 3th end 2025/ end 2028
	Number of participants: 4000
	Status: Enrolment in progress. First enrolled on November 20, 2025.
	Pathology: Japanese encephalitis
	Sponsor: *Inserm-ANRS MIE*
	Funded by the AAP "Emergences PRFI" (ANRS-MIE) 2023/2024 & by the French Ministry for Europe and Foreign Affairs.
The project (250 words max)	**DEMELE-JEV** is a prospective observational paediatric cohort, combining both cross-sectional and longitudinal designs, conducted in Cambodia. The primary aim of the study is to quantify the clinical burden of Japanese Encephalitis (JE) and to investigate the asymptomatic circulation of JEV among Cambodian children. The study focuses on two groups: children without fever at recruitment and children hospitalized with febrile neurological syndrome (FNS). Secondary objectives include estimating anti-JEV seropositivity rates, identifying individual risk factors and living conditions associated with JEV infection, characterizing clinical and biological profiles associated to disease severity, evaluating the role of interferon (IFN) response deficiencies in severe JEV cases, and to describe the influence of dengue immunity on the JEV infection epidemiology.
Latest news (if applicable)	First enrolled on November 20, 2025.
References of Publications (if any)	NA
Type of study	Prospective observational cohort

Main objectives	To quantify the clinical burden of JE and the asymptomatic circulation of JEV based on two groups of children living in Cambodia: (i) prospectively followed children, non-febrile at recruitment (cohort 1) and (ii) children hospitalized for febrile neurological syndrome (FNS) with JE (cohort 2).
Secondary objectives	• To estimate the anti-JEV seropositivity rate in children attending Kantha Bopha hospitals in Phnom Penh and Siem Reap for different age groups. • To describe the influence of dengue immunity on the epidemiological, clinical, and biological characteristics of JEV infection (cohorts 1 and 2). • To develop new tools (Luminex serology) for diagnosis of JEV infection • To develop evaluate new tools (QUIASTAT) for diagnosis of meningitis and encephalitis infection in Cambodia • To model anti-JEV antibody kinetics over time following natural infection and vaccination (cohorts 1 and 2). • Using mathematical modeling of antibody titers, to quantify DENV and JEV interaction, e.g., to estimate the reduction of the risk of JEV infection following DENV infection. • To study the involvement of deficiencies in the type I IFN response in the development of severe JEV infection (cohort 2), by genetic analysis (whole exome sequencing) and detection of auto-antibodies against type I IFNs. • To assess the environmental factors associated with positive JEV (this will be based on the cross-sectional design). • To identify individual risk factors, landscapes and living conditions associated with JEV new infection (cohort 1). • To identify the etiologies of FNS in children. • To identify potential clinical and biological profile associated to treatable etiology or to severity in patients with FNS to guide hospital care (all FNS children). • To study the involvement of deficiencies in the IFN response in the development of severe JEV infection (cohort 2). • To build capacity at the University of Health Science (UHS) for laboratory and clinical investigation of JE and for establishment of prospective pediatric cohort that can be redirected to address other emerging issues (cohorts 1 and 2).

Managing website filters

Select the categories that will be used to classify the Project File for the search by filter on the website

(a category can be created if required). Select the items for the 4 filters:

- Pathologies :
- Disciplines
- Domains
- Country

PATHOLOGIES

☒ Arboviroses

☐ Covid-19

☐ Ebola

☐ Viral haemorrhagic fevers

☐ Viral hepatitis
☐ STI
☐ Emerging diseases
☐ Mpox
☐ Tuberculosis
☐ HIV/AIDS
☐ Respiratory viruses

DISCIPLINES

☒ Clinic
☐ Fundamental
☐ Human and Social Sciences, Public Health
☒ Translational

AREAS

☐ Comorbidities
☐ Behaviour and representations
☒ Screening, diagnosis
☐ Political and economic issues
☐ Financing
☐ Cure, remission
☐ Host/pathogen interaction
☐ Scientific days
☐ Mother and child
☒ Modelling and epidemiology
☐ One Health
☐ Pathogenesis
☒ People affected
☐ Prevention
☒ Treatment and care
☐ Transmission
☐ Vaccination

COUNTRY

☐ Brazil
☐ Burkina Faso
☒ Cambodia
☐ Cameroon
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☐ Egypt
☐ Europe
☐ France
☐ Guinea
☐ International
☐ Mali
☐ RDC
☐ Senegal
☐ Vietnam
☐ Zambia

Contents

A

Main inclusion criteria

Cohort 1:

- All children aged between 2 and 14 years.
- No fever or history of fever in the past 14 days.
- Consenting to blood sampling.
- Written informed assent/consent to participate in the study.

Cohort 2:

- Hospitalized patients aged between 2 and 14 years.
- Any neurological disorder.
- Any fever within the past 72 hours.
- Written informed consent to participate in the study.
- No contraindication for lumbar puncture (LP).

- Additional inclusion criteria for the followed sub-group : Confirmed laboratory JEV infection (baseline and 1 month post inclusion with positive PCR or positive seroneutralization); Consenting to return to the hospital at M3, M6, M12 for the for follow-up visits

Main non-inclusion criteria Specific to Research	NA
Primary endpoint:	Incidence of Japanese Encephalitis Virus infection in both participant groups based on laboratory confirmation (PCR positivity, seroconversion, or 4 fold antibody rising based on ELISA results, with confirmatory testing by virus neutralization assays).
Secondary endpoint(s) :	To assess factors associated to severity among children hospitalized with febrile neurological syndrome (FNS) who are confirmed JEV cases. Severity will be evaluated based on the following clinical indicators: • Low Glasgow Coma Scale (binary outcome: presence or absence). • Need for intensive care (binary outcome: presence or absence). • Presence of neurological sequelae (binary outcome: presence or absence). • Mortality (binary outcome: survival or death). Unit of Measure: Days for hospitalization length; binary measures for sequelae and mortality.
Monitoring procedures	

Data and samples collected	**Biotech libraries**	
	• Data : • Clinical and medical history data • Microbiological data: multiplex and singleplex real-time PCR, blood and CSF cultures • Serological tests: DENV & JEV IgG/IgM ELISA, seroneutralization • Genomic data: sequencing • Demographic and Socio-economic data • Neurological assessments: Glasgow Coma Scale, mental status, confusion, neck stiffness…	• Whole blood→ Serum • Cerebrospinal fluid (CSF)

B - How to access the collection

1- project submission**: via the sample request form on the website**

2- project assessment: **scientific committee**

3- Making the collection available**: final decision by ANRS MIE management or Scientific Council**

Contact e-mail address for submitting your project: **biobanque@anrs.fr**