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Dengue infection in adults and children in Hanoi: a descriptive clinical and immunological study

Submission date	Recruitment status	[_] Prospectively registered
24/07/2008	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
21/10/2008	Completed	[_] Results
Last Edited	**Condition category**	[_] Individual participant data
21/10/2008	Infections and Infestations	[_] Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
CTU04DXAPR08

Study information

Scientific Title

Study objectives
We hypothesise that factors other than enhancing antibody level affect viral load and dengue severity. To identify such factors we will focus on patients with symptomatic primary dengue who by definition lack pre-existing dengue antibodies.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. The Oxford Tropical Medicine Research Ethics Committee (OXTREC) (UK) gave approval on the 25th June 2008 (ref: 26/08)
2. Pending as of 25/07/2008 from the NIITD Ethical Committee (Viet Nam)

Study design
Observational descriptive study

Primary study design
Observational

Study type(s)
Screening

Health condition(s) or problem(s) studied
Dengue fever

Interventions
Because dengue is seasonal, most of the dengue patients will be recruited over a period of some 6 months, from May to September. During this time, patients will be recruited and then followed up. If some patients have a persistent abnormality that may be dengue related, e.g. evidence of reduced cardiac function, they will be followed up until either their abnormality stabilises or for at least one year. Depending on recruitment, the study may be extended to cover a second dengue season.

Descriptive analyses of the endpoints will consist of proportions for categorical data and means (SD, 95% CIs) and/or median (inter-quartile and full ranges) for continuous data supplemented by graphical displays where relevant. Simple correlations (Pearson's correlation coefficient or Spearman's rho) will be made between continuous data, e.g. cytokine and complement concentrations. Comparative analyses will be between:
1. Patients who develop severe dengue (DHF/DSS) versus those who do not, and
2. Patients with 10 and 20 infections

For categorical data, the comparisons will be by chi squared. For continuous data, the student's 't' test for normally distributed data or Mann Whitney U tests for skewed data.

Other analyses:
1. Full blood count, differential white cell count
2. Clotting studies - prothrombin time (PT), activated partial thromboplastin time (aPTT), fibrinogen and d-dimers. Antithromin III, protein C and S may be done later on stored plasma.
3. Sodium, potassium, urea, creatinine, glucose, aspartate aminotransferase (AST), alanine aminotransferase (ALT), lactate dehydrogenase (LDH), total creatine kinase (CK), creatine kinase myocardial bands (CKmb) fraction, cardiac troponins, total bilirubin, total protein, albumin

4. Quantitative protein electrophoresis
5. Urine analysis
6. Radiology
7. Electrocardiograms (ECGs)
8. Echocardiograms (ECHO)
9. Spirometry (for lung function)
10. Virology studies

Intervention Type
Other

Phase
Not Specified

Primary outcome(s)
1. Proportions of patients with 10 (Immunoglobulin M and Immunoglobulin G ratio [IgM:IgG] greater than or equal to 1.8:1) or 20 (IgM:IgG ratio less than 1.8:1) infections*
2. Proportions of patients who develop severe dengue (DHF/DSS)

* as noted in section 4.3 of the protocol; these definitions may change

As it is a descriptive study the data will be analysed once all data have been collected. There are no timepoints for interim analyses.

Key secondary outcome(s))
1. The ECG abnormalities of rate, rhythm and ECG intervals (PR, QRS, QT)
2. Cardiac function (echocardiogram) - ejection fraction (%), cardiac index (L/min/m^2) and rate corrected velocity of circumferential ventricular fibre shortening adjusted for left ventricular wall stress (kilodyne/cm^2)
3. Lung volumes: forced vital capacity (FVC) in litres, forced expiratory volume in one second (FEV1) in litres/s, and the FEV1/FVC ratio
4. The proportions of patients with pleural effusions and ascites
5. Dengue viral load at baseline and over time
6. NS1 concentration at baseline and over time
7. Cytokine, complement and anti-dengue neutralising antibody concentrations at baseline and over time
8. Fractional clearances of albumin and other plasma proteins

As it is a descriptive study the data will be analysed once all data have been collected. There are no timepoints for interim analyses.

Completion date
30/01/2009

Eligibility

Key inclusion criteria
1. A patient of any age, including pregnant women, with suspected dengue infection using the World Health Organization (WHO) criteria below:
1.1. History of fever and two or more of the following:
1.1.1. Headache

1.1.2. Retro-orbital pain
1.1.3. Myalgia
1.1.4. Arthralgia
1.1.5. Rash
1.1.6. Haemorrhagic manifestation
1.1.7. Leukopaenia
2. Informed consent signed by the patient or parent/guardian

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Other

Sex
All

Key exclusion criteria
Does not comply with the above inclusion criteria.

Date of first enrolment
01/08/2008

Date of final enrolment
30/01/2009

Locations

Countries of recruitment
Viet Nam

Study participating centre
Oxford University Clinical Research Unit
Hanoi
Viet Nam
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Sponsor information

Organisation
University of Oxford (UK)

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Charity

Funder Name
The Wellcome Trust (UK) (grant ref: 077078)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration