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BK-SE36 phase 1a vaccine trial for falciparum malaria

Submission date	Recruitment status	[_] Prospectively registered
09/12/2009	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
23/12/2009	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
29/12/2020	Infections and Infestations	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Prof Toshihiro Horii

Contact details
3-1 Yamadaoka
Suita, Osaka
Japan
565-0871

Additional identifiers

Protocol serial number
BK-SE36/001

Study information

Scientific Title
Single-blind randomised controlled phase 1a trial of the safety and immunogenicity of lyophilised recombinant precipitated tropical malaria vaccine (BK-SE36) in Japan

Study objectives
Annual outbreaks of highly fatal falciparum malaria affect 500 million people worldwide, mainly in the tropical and subtropical regions, resulting in 1 - 3 million deaths. In Japan, malaria is

brought by persons who travel abroad and foreigners visiting Japan, with a few fatal cases of falciparum malaria sporadically reported. Drug-resistant Plasmodium has recently become prevalent, and expansion of the epidemic region due to global warming is a matter of concern, for which development of malaria vaccine is expected as a drastic measure. However, the outlook for practical application is still not in sight despite huge research efforts being made worldwide. Recombinant SE36 protein based on the N-terminal domain of P. falciparum serine repeat antigen (SERA) is a promising vaccine candidate. GMP grade of SE36 protein (BK-SE36) was prepared by extraction and purification of recombinant SE36 protein expressed in Escherichia coli, followed by adsorption to aluminum hydroxide and freeze-drying. The vaccine passed various specification tests, and was confirmed to be safe in GLP-conforming non-clinical studies (single- and repeated-dose toxicity studies, genotoxicity test, safety pharmacology, mutagenesis and local irritability test). Moreover, BK-SE36 cause no clinical symptom or abnormalities in haematology or blood chemistry, and induced marked antibody production against SE36 protein in immunological studies in chimpanzees. The design and choice of trial population for this first-in-man clinical phase 1 trial is based on the need to initially demonstrate the safety of BK-SE36 in humans.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Institutional Review Board of the Research Foundation for Microbial Diseases of Osaka University approved on the 16th November 2004

Study design
Phase 1a single blind randomised placebo-controlled single centre trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Falciparum malaria

Interventions
BK-SE36 versus placebo, subcutaneously, three times a day at 21 day interval. Dosage is as follows:
Group 1: each administration contains half dose of BK-SE36 (0.5 ml)
Group 2: each administration contains full dose of BK-SE36 (1.0 ml)

The total duration of follow-up is 63 days.

Intervention Type
Drug

Phase
Phase I

Drug/device/biological/vaccine name(s)

Tropical malaria vaccine (BK-SE36)

Primary outcome(s)
The safety of BK-SE36 is assessed by the presence or absence of adverse events evaluated from test results, subjective/objective symptoms, laboratory data, blood pressure/pulse rate and body temperature.

Subjects were visited once a week. At every subjects' visit to the hospital, doctors did health interview for finding some symptoms and blood/serum examination and measurement of blood pressure etc were conducted at the time.

Key secondary outcome(s))
Changes in the anti-SE36 protein antibody titre at each time point.

Subjects were visited once a week. At every subjects' visit to the hospital, doctors did health interview for finding some symptoms and blood/serum examination and measurement of blood pressure etc were conducted at the time.

Completion date
26/05/2005

Eligibility

Key inclusion criteria
1. Healthy adult Japanese males aged 20 to 35 years (age on informed consent)
2. Those whose body mass index (BMI) is 18.5 to 25.0 kg/m^2
3. Those who are able to agree, comply with matters to be observed during participation in the trial, undergo consultation/examination, as described in this protocol, and report symptoms
4. Those who are considered to be eligible to participate in this trial based on screening:
4.1. Vital signs and physical examination are within baseline range
4.2. Haematology: within 15% deviations from the upper and lower limits of the baseline range. The differential white blood count is not questioned when the white blood cell count is within the baseline range.
4.3. Blood chemistry:
4.3.1. Aspartate aminotransferase (AST), alanine aminotransferase (ALT) and creatinine within the baseline range
4.3.2. Total bilirubin, triglyceride (TG) within 50% deviation from the upper limit
4.3.3. Serum electrolytes within the baseline range
4.3.4. Other blood chemistry items within 15% deviation from the upper and lower limits of the baseline range
4.4. Urinalysis within the normal range
4.5. Infectious disease tests within the normal ranges

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
Male

Total final enrolment
40

Key exclusion criteria
1. Persons with fever (37.5°C or higher) on administration of the test vaccine
2. Persons with clear symptoms of serious acute disorders
3. Persons with a clear history of food/drug-related anaphylaxis
4. Persons with a clear history of malaria, or those with anti-plasmodium falciparum (SE36 antigen) antibody
5. Persons with a history or present illness of disorders requiring gastrointestinal surgery, serious cardiovascular/blood system/respiratory/liver/kidney/digestive tract/neuropsychiatric disorders, or developmental anomalies
6. Persons with a history of fever within 2 days after preventive administration with other types of vaccine, or those in whom symptoms have suggested systemic allergy
7. Persons with a history of convulsion
8. Persons under a diagnosis of immunodeficiency
9. Persons with a history or tentative diagnosis of drug allergy
10. Persons with a history of or present drug/ alcohol dependency
11. Persons who took any medication within 1 week before administration of this test vaccine
12. Persons to whom any live vaccine was administered within 4 weeks before administration of this test vaccine, or inactivated vaccine/toxoid was administered within 1 week
13. Persons who participated in another trial within 4 months before administration of this test vaccine
14. Persons in whom 200 ml of blood was collected (donation) within 1 month before administration of this test vaccine, or more than 400 ml of blood was collected within 3 months
15. Persons consuming excessive alcohol or cigarettes
16. Persons with a positive reaction on drug abuse screening
17. Others who are not considered to be eligible by the chief principal investigator or sub-investigator

Date of first enrolment
14/01/2005

Date of final enrolment
26/05/2005

Locations

Countries of recruitment
Japan

Study participating centre

3-1 Yamadaoka
Suita, Osaka
Japan
565-0871

Sponsor information

Organisation
The Research Foundation for Microbial Diseases of Osaka University (BIKEN) (Japan)

ROR
https://ror.org/035t8zc32

Funder(s)

Funder type
Government

Funder Name
Japanese Ministry of Education, Science, Sports, Culture and Technology (Japan) - Grant-in-Aid for Scientific Research on Priority Areas (ref: 13226058; 13225001)

Funder Name
The Research Foundation for Microbial Diseases of Osaka University (BIKEN) (Japan)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/09/2010	29/12/2020	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes