

# Mild induced hypothermia for severe falciparum malaria

<b>Submission date</b> 19/06/2013	<b>Recruitment status</b> No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered
		<input type="checkbox"/> Protocol
<b>Registration date</b> 23/10/2013	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 06/08/2020	<b>Condition category</b> Infections and Infestations	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

Background and study aims

Mild hypothermia (when body temperature drops below 35°C) has been shown to be protective in many situations in intensive care and this study aims to find out whether it could help patients with severe and cerebral malaria. This is a pilot (small scale) study.

Who can participate?

Patients admitted to intensive care with severe malaria

What does the study involve?

All patients are cooled to between 32 and 34°C using a cooled salt solution injected through their veins, in addition to standard treatment.

What are the possible benefits and risks of participating?

This technique may reduce death or brain damage from severe malaria

Where is the study run from?

This study is run from University College Hospital, London, UK and Chittagong Medical College, Chittagong, Bangladesh

When is the study starting and how long is it expected to run for?

May 2014 to May 2015

Who is funding the study?

Oxford University (UK)

Who is the main contact?

Dr Brian Angus

brian.angus@ndm.ox.ac.uk

## Contact information

Type(s)

Scientific

**Contact name**

Dr Brian Angus

**Contact details**

Rm7400, L7 The John Radcliffe Hospital

Headington

Oxford

United Kingdom

OX3 9DU

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brian.angus@ndm.ox.ac.uk

## **Additional identifiers**

**Protocol serial number**

V1.3

## **Study information**

**Scientific Title**

A pilot study of mild induced hypothermia for severe falciparum malaria

**Study objectives**

Mild induced hypothermia is safe and efficacious in severe falciparum malaria.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

The Oxford Tropical Research Ethics Committee (OxTREC) 06-12

**Study design**

Non-randomised pilot study

**Primary study design**

Interventional

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

Malaria

**Interventions**

All patients will receive mild induced hypothermia along with the standard treatment. Patients will be cooled using cold intravenous saline and external cooling blankets. Patients will be followed up until discharge from the hospital.

## **Intervention Type**

Other

## **Phase**

Not Applicable

## **Primary outcome(s)**

1. In-hospital mortality
2. 30 day mortality
3. Neurological outcome at day 30
4. Safety

Primary endpoints will be mortality and neurological state at baseline and discharge from hospital

## **Key secondary outcome(s)**

1. Parasite clearance time
2. Clinical and biochemical measures (see below).
3. Biochemical and hemodynamic measures at the start and completion of therapy will also be compared
4. Area under the curve for microvascular reactivity by reactive hyperemia-peripheral artery tonometry (RH-PAT) [0-25 hrs]
5. Endothelial function [nearinfrared reflectance spectroscopy (NIRS) and RH-PAT]
6. Lactate clearance
7. Improvement in microvascular obstruction [Orthogonal Polarization Spectral (OPS) imaging]
8. Change in tissue oxygen consumption (measured by NIRS occlusion phase)
9. Change in NO production
10. Change in red cell deformability
11. Changes in CSF markers of neuronal and axonal damage and astroglial activation

## **Completion date**

01/05/2015

## **Eligibility**

### **Key inclusion criteria**

1. Age 16-60 years
2. Informed consent obtained (plus parental/guardian assent if 16 or 17 years old)
3. Time of commencement of artesunate  $\leq$ 18 hrs before therapy
4. Any level of Plasmodium falciparum parasitemia, and one or more of the following criteria:
  - 4.1. Acute renal failure (creatinine  $>$ 265 $\mu$ mol/L)
  - 4.2. Hyperbilirubinemia (total bilirubin  $>$ 50  $\mu$ mol/L) with either renal impairment (creatinine  $>$ 130 $\mu$ mol/L) or parasitemia of  $>$ 100,000 parasites/ $\mu$ L
  - 4.3. Blackwater fever
  - 4.4. Hyperparasitemia ( $>$ 10% parasitised red cells)
  - 4.5. Cerebral malaria (Glasgow coma score  $<$ 11)
  - 4.6. Hypoglycemia
  - 4.7. Respiratory distress (RR  $>$ 32)
  - 4.8. Venous bicarbonate 12-15 meq/L (pilot phase) or 8-15 meq/L

### **Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

All

**Key exclusion criteria**

1. Pregnancy or lactation
2. Diabetes
3. Serious pre-existing disease (cardiac, hepatic, kidney)
4. History of contraindications to hypothermia (Raynauds disease, Cryoglobulinemia, Sickle Cell disease, serum cold agglutinins, Buerger's disease)
5. Bleeding disorders (e.g., hemophilia)
6. An intranasal obstruction or known skull base fracture

**Date of first enrolment**

01/05/2014

**Date of final enrolment**

01/05/2015

**Locations**

**Countries of recruitment**

United Kingdom

England

Bangladesh

**Study participating centre**

**The John Radcliffe Hospital**

Oxford

United Kingdom

OX3 9DU

**Sponsor information**

**Organisation**

University of Oxford (UK)

**ROR**

<https://ror.org/052gg0110>

**Funder(s)****Funder type**

University/education

**Funder Name**

University of Oxford (UK)

**Results and Publications****Individual participant data (IPD) sharing plan****IPD sharing plan summary**

Not provided at time of registration