

Treatment of uncomplicated falciparum malaria in Bobo-Dioulasso, Burkina Faso: comparison of artemether/lumefantrine, dihydroartemisinin/piperaquine, and amodiaquine/sulfadoxine-pyrimethamine

Submission date

09/02/2007

Recruitment status

No longer recruiting

☐ Prospectively registered

☐ Protocol

Registration date

24/04/2007

Overall study status

Completed

☐ Statistical analysis plan

☒ Results

Last Edited

23/09/2021

Condition category

Infections and Infestations

☐ Individual participant data

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

Contact name

Prof Ouedraogo Jean Bosco

Contact details

399, Avenue de la Liberte

PO BOX: 545

Bobo-Dioulasso

Burkina Faso

-

+226 20 981880

jbouedraogo.irss@fasonet.bf

Additional identifiers

Study information

Scientific Title

Treatment of uncomplicated falciparum malaria in Bobo-Dioulasso, Burkina Faso: comparison of artemether/lumefantrine, dihydroartemisinin/piperaquine, and amodiaquine/sulfadoxine-pyrimethamine

Study objectives

We hypothesize that Artemether/Lumefantrine (AL) and Dihydroartemisinin/Piperaquine (DP), each of which is a promising new artemisinin-based combination antimalarial therapy, and Amodiaquine/Sulfadoxine-Pyrimethamine (AQ/SP), an older regimen, will provide outstanding and equivalent efficacy for the treatment of uncomplicated malaria. To test this hypothesis, our aim will be to compare the antimalarial efficacy of these three regimens. The study will be a randomized comparison at three sites in Bobo-Dioulasso. A secondary aim will be to compare the safety and tolerability of the study regimens.

Ethics approval required

Old ethics approval format

Ethics approval(s)

1. UCSF committee on Human Research (California, USA), approved on 25 July 2006. Ref: CHR # H2397-29335-01
2. Centre Muraz / IRSS Institutional Review Board (Burkina Faso), approved in July 2006. Ref: 012-2006/CE-CM

Primary study design

Interventional

Study design

Randomized, single-blind trial.

Study type(s)

Health condition(s) or problem(s) studied

Malaria

Interventions

This trial compares three therapies for uncomplicated malaria, conducted at three locations in the city of Bobo-Dioulasso, Burkina Faso. The design will closely follow two studies that we conducted in 2004 and 2005 in Burkina Faso (UCSF CHR H2397-25259 and H2397-27158) following guidelines of the World Health Organization (WHO) for assessment of therapeutic efficacy of antimalarial agents in areas of intense transmission, with slight modifications. The target population is residents of three catchment areas within Bobo-Dioulasso, with care at dispensaries at Sarfalao, Colsama and Ouezzin-ville. The available population is residents aged 6 months and older who present to one of the study clinics with symptoms suggestive of malaria and who have a positive screening thick blood smear. Subjects who meet the inclusion criteria and are enrolled in the trial will be randomized to treatment with one of the three study regimens and will be followed for 42 days. The study regimens will be AL (Coartem), DP (Duocotexcin), and AQ/SP, each administered for three days. Repeat evaluations will be performed on days 1, 2, 3, 7, 14, 21, 28, 35 and 42 and will include assessment for the occurrence of any serious adverse events. Treatment efficacy outcomes will be assessed using modifications of WHO clinical and parasitological classification criteria.

Patients will be randomized to receive:

1. Artemether-lumefantrine (Novartis, 20 mg artemether/120 mg lumefantrine tablets, 1 [5 - 14 kg], 2 [15 - 24 kg], 3 [25 - 34 kg], or 4 [> 35 kg] tablets twice daily for 3 days) or
2. Amodiaquine (Parke-Davis, 200 mg tablets, 10 mg/kg on days 0 and 1, and 5 mg/kg on day 2) + sulfadoxine-pyrimethamine (Roche, 25 mg/kg of sulfadoxine and 1.25 mg/kg pyrimethamine administered on day 0) or
3. Dihydroartemisinin/piperaquine once daily for 3 days in the morning given in fixed dose tablets (40 mg dihydroartemisinin + 320 mg piperaquine) according to weight-based guidelines consisting of a total dose of 6.4 and 51.2 mg/kg of dihydroartemisinin and piperaquine, respectively.

Intervention Type

Other

Phase

Not Specified

Primary outcome(s)

Primary outcomes will be based on the risk of clinical and parasitological treatment failure after 28 days of follow-up either adjusted or unadjusted

Key secondary outcome(s)

1. Risk of clinical failure after 14 days of follow-up
2. Risk of rescue therapy after 42 days of follow-up
3. Risk of fever during the first 3 days of follow-up: presence or absence of objective fever (axillary temperature > 37.5°C) or patient report of fever on days 1, 2, 3
4. Risk of parasitemia on follow-up days 2 and 3: proportion of positive vs. negative thick blood smears on day 2 and day 3
5. Change in mean hemoglobin from day 0 to 42 or day of repeat therapy
6. Proportion gametocytemic: presence vs. absence of gametocytes on any follow-up thick blood smear; proportion gametocytemic on days 2, 3, 7, 14, 21, 28, 35 and 42
7. Risk of serious adverse events: proportion of patients experiencing any serious adverse event in each treatment group during the 42-day follow-up period, excluding treatment failures
8. Risk of adverse events of moderate or greater severity, at least possibly related to the study medications, excluding treatment failures

Completion date

31/01/2007

Eligibility

Key inclusion criteria

1. Age 6 months and above
2. Fever (> 37.5°C axillary) or history of fever in the previous 24 hours
3. Absence of any history of serious side effects to study medications, including allergy to sulfa drugs
4. No evidence of a concomitant febrile illness in addition to malaria
5. Provision of informed consent and ability to participate in 42-day follow-up (patient has easy access to health unit)
6. No history of treatment with any antimalarial (other than chloroquine) in the past 2 weeks.

7. No danger signs or evidence of severe malaria defined as:
- 7.1 Unarousable coma (if after convulsion, > 30 min)
 - 7.2 Repeated convulsions (> 2 within 24 h)
 - 7.3 Recent convulsions (1-2 within 24 h)
 - 7.4 Altered consciousness (confusion, delirium, psychosis, coma)
 - 7.5 Lethargy
 - 7.6 Unable to drink or breast feed
 - 7.7 Vomiting everything
 - 7.8 Unable to stand/sit due to weakness
 - 7.9 Severe anemia (hemoglobin < 5.0 g/dL)
 - 7.10 Respiratory distress (labored breathing at rest)
 - 7.11 Jaundice (yellow coloring of eyes)

Patients fulfilling these criteria will be assigned a study number and referred to the study nurse for treatment allocation and treatment with the study medications. Patients must also meet the following criterion:

8. Absence of repeated vomiting of study medications on day 0

After treatment with the study medications, patients will be referred to the laboratory. A fingerprick blood sample will be obtained to prepare thick and thin blood smears, and for measurement of hemoglobin. Patients will be excluded from the study on day 1 if the following inclusion criteria are not met.

- 9. *P. falciparum* mono-infection
- 10. Parasite density > 2000/ul and < 200,000/ul
- 11. Hemoglobin > 5.0 g/dL

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Not Specified

Sex

Key exclusion criteria

- 1. Signs of severe malaria/danger signs
- 2. Known Allergy to the study medications
- 3. Inability to participate in 42 days follow up
- 4. Concomittant febrile illness
- 5. Severe anemia < 5g/dL
- 6. Absence of provision of informed and signed consent
- 7. Previous antimalarial use (other than chloroquine [CQ]) in the previous 14 days
- 8. Mixed infection

Date of first enrolment

01/08/2006

Date of final enrolment

31/01/2007

Locations

Countries of recruitment

Burkina Faso

Study participating centre

399, Avenue de la Liberte

Bobo-Dioulasso

Burkina Faso

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Sponsor information

Organisation

Institut de Recherche en Science de la Sante (IRSS) (Burkina Faso)

ROR

<https://ror.org/05m88q091>

Funder(s)

Funder type

Charity

Funder Name

Doris Duke Charitable Foundation (USA)

Alternative Name(s)

Doris Duke Charitable Foundation, Inc., DDCF Trust, Doris Duke Foundation, The Doris Duke Charitable Foundation, DDCF, DDF

Funding Body Type

Private sector organisation

Funding Body Subtype

Trusts, charities, foundations (both public and private)

Location

United States of America

Funder Name

Beijing Holley-Cotec Pharmaceuticals Co. Ltd (China)

Funder Name

International Atomic Energy Agency (Austria)

Alternative Name(s)

IAEA

Funding Body Type

Private sector organisation

Funding Body Subtype

International organizations

Location

Austria

Funder Name

National Budget of Institut de Recherche en Science de la Sante (IRSS)/ Direction Regionale de l'Ouest (DRO) (Burkina Faso)

Results and Publications

Individual participant data (IPD) sharing plan**IPD sharing plan summary****Study outputs**

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/12/2007	23/09/2021	Yes	No