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Screening for Group B Streptococcus bacteria in Malawian women going through childbirth to guide decisions on protective antibiotic prescription

Submission date
11/04/2022

Recruitment status
No longer recruiting

Registration date
09/06/2022

Overall study status
Completed

Last Edited
10/06/2022

Condition category
Infections and Infestations

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[_] Record updated in last year

Plain English summary of protocol

Background and study aims
The study is about a germ called Group B Streptococcus (GBS) which can make babies very sick. GBS is carried by many healthy women and does not usually cause any problems in the women. However, this bacterium can be passed from mother to baby during labour, and for some newborn babies, this germ can be dangerous, and can cause babies to become unwell. It is the commonest cause of serious infection and meningitis (inflammation around the brain) in babies up to 3 months old, and can even cause death and disability. Usually treatment of the germ is done before labor starts but because it is not routinely tested for in Malawi, doctors usually are not able to treat women earlier. More information is needed about this germ to help find the best way to prevent this disease in babies. The tests used to identify this germ also need to be improved. The aim of this study is to identify women who are infected with this germ and then treat them to help us determine if it is possible to treat women when they are in labor.

Who can participate?
Women in active labor, at a gestational age greater than 34 weeks

What does the study involve?
A swab will be taken from the vagina and rectum at admission and tested for GBS. If GBS positive, an antibiotic will be given to the woman before delivery and cord blood will be taken upon delivery of the baby.

What are the possible benefits and risks of participating?
By taking part in the study the participant may help the researchers to try and reduce the number of babies that become unwell with GBS, and improve their understanding of when to administer antibiotics to best treat GBS infection. Also, participants carrying GBS will receive an antibiotic to reduce the chance of infecting their newborn babies. Taking the swab is painless. If the participant is GBS positive she will be offered an antibiotic (ampicillin) to get rid of the germ, and this will require an injection which may cause some mild discomfort. Some people are

allergic to the antibiotic, but treatment for this allergy is available in Queen Elizabeth Central Hospital for all mothers. The baby will feel no pain when blood is being taken from the cord.

Where is the study run from?
The study will be run at Queen Elizabeth Central Hospital in Blantyre, Malawi, with supportive guidance from Investigators based at Queens University, Belfast, Ireland.

When is the study starting and how long is it expected to run for?
March 2017 to December 2023

Who is funding the study?
The McClay Foundation (UK)

Who is the main contact?
Dr Chisomo Msefula
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Contact information

Type(s)
Principal Investigator

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
P.04/21/3303

Study information

Scientific Title
A feasibility study of intrapartum Group B Streptococcus testing using the loop-mediated isothermal amplification assay to guide antibiotic prophylaxis in Malawi

Acronym
GBS-S

Study objectives
A recent review of strategies to prevent Group B Streptococcus (GBS) disease in Africa (Nishihara et al, 2017) highlighted the difficulty of implementing either universal screening or risk-based intrapartum antibiotic prophylaxis (IAP) in resource-limited settings where culture facilities are not widely available. This project will assess whether the use of a rapid and accurate molecular diagnostic test to detect GBS during labour can identify at-risk pregnant women early enough for effective antibiotic prophylaxis to be used before delivery. Evaluating whether this strategy of test-directed IAP is feasible and can be implemented in a resource-limited setting will inform the development of clinical practice and guidelines in Malawi and beyond, bringing real clinical and health benefits. If successful, the work will lead to practical and high-impact clinical interventions to improve child health in Malawi, and potentially lead to substantial reductions in neonatal deaths.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 16/06/2021, College of Medicine Research Ethics Committee (Kamuzu University of Health Sciences, Mahatma Gandhi Road, P/Bag 360, Chichiri, Blantyre, Malawi; +265 (0)1 871 911/ (0)1 877 245/(0)1 877 291; comrec@medcol.mw), ref: P.04/21/3303

Study design
Prospective clinical feasibility study

Primary study design
Observational

Secondary study design
Cross sectional study

Study setting(s)
Hospital

Study type(s)
Screening

Participant information sheet
Not available in web format, please use the contact details to request a participant information sheet

Health condition(s) or problem(s) studied

Screening for Group B Streptococcus colonisation in pregnant women

Interventions
The study population includes women who present to the labor ward of Queen Elizabeth Central Hospital, Blantyre Malawi. Trained Research Midwife Nurses approach the women to provide information about the study and to seek consent for participation in the study.

A rectovaginal swab is collected from the consenting women and transferred to a room approximately 5 minutes away for testing of Group B Streptococcus using the HG GBS swab test (HiberGene Diagnostics Ltd, Dublin, Ireland). This is a commercially available molecular test with CE-IVD approval for diagnostic testing in Europe, giving results in 30 - 45 minutes. It is a proven diagnostic test with excellent performance (sensitivity: 96.7%, specificity 97.7%, relative to an enriched culture method gold standard).

Women who test negative for GBS will receive standard of care, which may include antibiotic treatment if clinically indicated according to existing departmental guidelines. Women who test positive for GBS during labor will, in addition to standard of care, be offered intrapartum antibiotic prophylaxis according to existing practice in Malawi (slow intravenous injection of infusion of ampicillin). Immediately following delivery, samples of neonatal cord blood for determination of ampicillin concentration will be collected and stored for later analysis by reverse-phase high-performance liquid chromatography.

Women and babies from both groups (either negative or positive for GBS) will be followed up clinically 7 days later telephonically.

Intervention Type
Other

Primary outcome measure
Colonisation with Group B Streptococcus measured using the loop-mediated isothermal amplification assay (LAMP) during labour at hospital admission

Secondary outcome measures
1. Results turnaround time from sample collection (vaginal and rectal swabs) to the administration of ampicillin in those positive for Group B Streptococcus
2. Concentration of ampicillin in cord blood at delivery measured using high-performance liquid chromatography (HPLC) in GBS-positive women given ampicillin

Overall study start date
01/03/2017

Completion date
31/12/2023

Eligibility

Key inclusion criteria
Pregnant women in active labour at a gestational age greater than 34 weeks (≥4 cm dilated and regular contractions)

The researchers will also aim to identify and recruit women who present to the labour ward with premature rupture of membranes (PROM), but who are not yet in labour (<4 cm dilated). If recruited into the study, they will only be tested for GBS when labour begins (≥4 cm dilated and regular contractions).

Participant type(s)
Patient

Age group
Adult

Sex
Female

Target number of participants
3200

Key exclusion criteria
1. Preterm labour with estimated gestation <34 weeks as the obstetric management highly variable in this group, including the administration of tocolytic drugs
2. Labour with an estimated fetal size of <2 kg (as a proxy for gestational age, which may not be reliable)
3. Presentation in labour with cervical dilation ≥8cm as there is little likelihood of achieving testing and IAP before they deliver

Date of first enrolment
01/01/2021

Date of final enrolment
31/12/2022

Locations

Countries of recruitment
Malawi

Study participating centre
Queen Elizabeth Central Hospital
PO Box 95
Blantyre
Malawi
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Study participating centre
Kamuzu University of Health Sciences
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University/education

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ROR
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Funder(s)

Funder type
Charity

Funder Name
The McClay Foundation

Results and Publications

Publication and dissemination plan
The results of this study will be made available to the Malawi Ministry of Health, the Kamuzu University of Health Sciences Ethics Committee - COMREC, the Kamuzu University of Health

Sciences Library, the Department of Gynecology and Obstetrics, and published in peer reviewed journals and also will be disseminated to the general public through the annual Kamuzu University of Health Sciences Research dissemination conference.

Intention to publish date
31/12/2023

Individual participant data (IPD) sharing plan
The datasets generated and/or analysed during the current study will be published as a supplement to the subsequent results publication

IPD sharing plan summary
Published as a supplement to the results publication