ISRCTN43031232 https://doi.org/10.1186/ISRCTN43031232

The use of low-dose aspirin for the prevention of hypertensive disorders of pregnancy in a Sub-Saharan country

Submission date
19/08/2024

Recruitment status
No longer recruiting

Registration date
23/08/2024

Overall study status
Completed

Last Edited
22/08/2024

Condition category
Pregnancy and Childbirth

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

Plain English summary of protocol

Background and study aims
In South Africa, the level of hypertensive (high blood pressure) disorders of pregnancy remains high. The Saving Mothers executive summary report (2020-2022) states that hypertensive disorders of pregnancy are the third leading cause of deaths occurring to mothers during and after pregnancy, accounting for 14.7% of all deaths in SA and the impact of COVID-19 pandemic led to current status.

Therefore, this study aims to determine the effect of low-dose aspirin in pregnant women of African ancestry and its association with hypertensive disorders of pregnancy. The study evaluates aspirin as a treatment for primary prevention of hypertensive disorders, including preeclampsia in all pregnant women considered to be at high risk following first -three months of pregnancy. Also , to evaluate the effects of aspirin on the occurrence in early (delivery before 34 weeks of pregnancy) preeclampsia, the rate of unexpected growth of small size baby in the womb, loss in the womb during delivery and after delivery, placental separation before delivery and admission to neonatal intensive care as secondary prevention.

Who can participate?
Pregnant women, between 12 to 20 weeks of pregnancy aged 18 years and above and that are considered to be at risk of hypertensive disorders of pregnancy.

What does the study involve?
The study involves low-dose aspirin intake (162mg) daily at night from the day of recruitment until 36 of pregnancy, or treatment as usual, thereafter followed up until delivery.

What are the possible benefits and risks of participating?
The benefits of participating in the study was the reduced occurrence of hypertensive disorders of pregnancy involving preeclampsia and gestational hypertension.

Where is the study run from?
University of Kwa-Zulu Natal college of health sciences (South Africa). The study was conducted in a regional hospital in KwaZulu-Natal province of South Africa.

When is the study starting and how long is it expected to run for?
The study commenced in March 2019 and ended in April 2024 It could not continue due to COVID-19 pandemic and KwaZulu-Natal floods that affected the entire recruitment.

Who is funding the study?
University of Kwa-Zulu Natal college of health sciences and the Women's health and HIV research unit (South Africa)

Who is the main contact?
Princess Zinhle Mkhize, zihlandla@yahoo.com

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Ms Princess Zinhle Mkhize

ORCID ID
https://orcid.org/0000-0002-9823-9460

Contact details
60 Marian Dale complex
Marianhill park
Pinetown
Durban
South Africa
3610
+27 833924358
971136680@stu.ukzn.ac.za

Type(s)
Scientific

Contact name
Prof Jagidessa Moodley

ORCID ID
https://orcid.org/0000-0003-1130-9364

Contact details
Room 196 Main building
Nelson R. Mandela School of Medicine
University of KwaZulu-Natal
719 Umbilo Road
Berea

Durban
South Africa
4001
+27 312604675
jmog@ukzn.ac.za

Type(s)
Public, Scientific

Contact name
Dr Vinogrin Dorsamy

ORCID ID
https://orcid.org/0000-0002-0655-697X

Contact details
Room 220 Main building
Nelson Mandela School of Medicine
University of KwaZulu-Natal
719 Umbilo Road
Berea
Durban
South Africa
4001
+27 847447611
dorsamyv1@ukzn.ac.za

Additional identifiers

Protocol serial number
BREC BFC163/19

Study information

Scientific Title
The effect of low dose aspirin in the prevention of hypertensive disorders of pregnancy: A parallel open labelled randomized controlled trial

Acronym
ELDAPPE study

Study objectives
Does administration of low dose aspirin result in a decrease in frequency of hypertensive disorders when prescribed in early pregnancy

Ethics approval required
Ethics approval required

Ethics approval(s)

Approved 10/09/2020, Biomedical Research Ethics Committee, University of KwaZulu-Natal (Biomedical Research Ethics Committee Research Office, UKZN Private Bag X 54001 Durban 4000, Durban, 4001, South Africa; +27 2604709; BREC@ukzn.ac.za), ref: BFC136/19

Primary study design
Interventional

Study design
Single centre interventional open labelled parallel randomized controlled trial

Study type(s)
Prevention, Treatment

Health condition(s) or problem(s) studied
Prevention of hypertensive disorders of pregnancy, in particular, pre-eclampsia

Interventions
This was a single center interventional, open labelled randomized controlled trial. The study was conducted at a regional hospital in South Africa to evaluate the effectiveness of low-dose aspirin (LDA) in preventing HDP in women of African ancestry. Normotensive pregnant women aged ≥18 years, with singleton pregnancies between 12 and 20 weeks of gestation, were recruited from the study site's antenatal clinic. The intention was to recruit between 12-16 weeks gestation. The initial intention was to recruit 970 participants, with equal numbers assigned to the intervention and control groups. Due to recruitment challenges, 423 participants were eventually enrolled. The initial sample (970), size was statistically obtained based on hypertensive disorder incidence (12%) in South African context. A simple random sampling was conducted to select women based on the inclusion and exclusion criteria.

Randomization and Grouping: Participants were randomly assigned to either the intervention group (n=209) or the control group (n=214) using a simple 1:1 allocation ratio. As such randomisation occurred based on a coin toss with one participant allocated to the representation of the coin face and the following participant that was recruited was allocated to the alternate group. The intervention group received low-dose aspirin (Ecotrin, 162 mg daily) monthly supply, while the control group received standard antenatal care without aspirin.

Intervention: LDA was initiated between 12 and 20 weeks of gestation and continued until 36 weeks. Participants in the intervention group were instructed to take 162 mg of LDA nightly. Compliance was monitored through "pill counts" and bi-weekly telephonic interviews

Intervention Type
Drug

Phase
Phase III

Drug/device/biological/vaccine name(s)
Aspirin [Ecotrin]

Primary outcome(s)

Incidence of hypertensive disorders of pregnancy including pre-eclampsia (both early and late) and gestational hypertension (defined as a systolic blood pressure (SBP) ≥140 mm Hg and/or diastolic blood pressure (DBP) ≥90 mm Hg after 20 weeks of gestation in a woman who was at baseline normotensive) measured using a sphygmomanometer

Key secondary outcome(s)
1. Gestational age measured at delivery
2. Baby weight measured in kg at birth
3. Infant outcome (dead or alive) during antenatal period

Completion date
01/04/2024

Eligibility

Key inclusion criteria
1. Pregnant women that is 18 years and older
2. Pregnant women and women with one or more risk factors for hypertensive disorders of pregnancy, such as a previous history of unexplained pregnancy loss,
3. Previous history or family history of hypertensive disorders,

Participant type(s)
Population

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Upper age limit
99 Years

Sex
Female

Total final enrolment
423

Key exclusion criteria
1. Women on aspirin or other antiplatelet agents
2. Women with multiple pregnancies
3. Women with fetal abnormalities, diabetes, hypertension, anemia, or other chronic diseases.
4. women with contraindications to aspirin use
5. Women who decline entry to the study

Date of first enrolment
01/05/2021

Date of final enrolment
31/01/2024

Locations

Countries of recruitment
South Africa

Study participating centre
Prince Mshiyeni Memorial Hospital
P/Bag X07 Mobeni 4060
Mangosuthu Highway
Durban
South Africa
4001

Sponsor information

Organisation
University of KwaZulu-Natal

ROR
https://ror.org/04qzfn040

Funder(s)

Funder type
University/education

Funder Name
College of Health Sciences, University of KwaZulu-Natal

Alternative Name(s)
University of KwaZulu-Natal, College of Health Sciences, UKZN’s College of Health Sciences, College of Health Sciences, College of Health Sciences - UKZN, University of KwaZulu-Natal College of Health Sciences, UKZN's CHS, CHS, UKZN CHS

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
South Africa

Results and Publications

Individual participant data (IPD) sharing plan
The dataset generated and analysed during the current study are not expected to be made available as there is ongoing study related to the work, however where data needs to be made available as it pertains to a particular outcome that is being published, that data will be made available for transparency

IPD sharing plan summary
Data sharing statement to be made available at a later date