

# Pregnancy and chronic hypertension; nifedipine or labetalol as anti-hypertensive treatment

<b>Submission date</b> 08/07/2014	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 10/09/2014	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 07/06/2018	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data

## Plain English Summary

### Background and study aims

Chronic hypertension is high blood pressure that usually needs to be treated with medication. It is important that high blood pressure is diagnosed and treated; without treatment it can cause damage to the heart, brain and kidneys, and complications such as a stroke. Around 3% of pregnant women have been diagnosed with high blood pressure before they become pregnant. A pre-existing high blood pressure puts pregnant women at an increased risk of complications in pregnancy such as pre-eclampsia and the baby not growing properly. The researchers want to find out which one of two different drugs works best at lowering blood pressure in pregnant women without any harmful effects for the mother or the baby. Both drugs are commonly used in pregnancy. Labetalol has a license for pregnancy which means that it has undergone clinical trials that have found it to be safe and effective for its use. Nifedipine is not licensed in pregnancy but can be used off-label (outside its license) if it is felt that the benefits of treatment are likely to outweigh the risks of harm to the mother or baby. These medications have been used by doctors in the UK for many years to treat pregnant women with high blood pressure and the medicines safety watchdog has reviewed this study and given its approval. As the choice of drug for high blood pressure outside of pregnancy depends partly on ethnic background, the study also looks at which treatment works best in pregnant women from different ethnic backgrounds.

### Who can participate?

Women aged 18 and over, with chronic hypertension, between 12 and 28 weeks pregnant with one baby, and who need treatment for their blood pressure

### What does the study involve?

Participants are randomly allocated into one of two groups. Those in group 1 are given labetalol. Those in group 2 are given nifedipine. Both participants and their doctors know which treatment they are getting to make sure they are taking the right dose. All participants are seen regularly by healthcare professionals and are asked to give extra blood and urine samples on five occasions during their pregnancy, usually at the same time that their routine blood tests are performed. These samples are used to measure substances in the blood and urine at the end of

the study to see if we can find out how each drug works. Participants are also asked for extra measurements of their blood pressure and to have a simple ultrasound (at the base of the neck) to check how the different drugs are working.

What are the possible benefits and risks of participating?

It is known that both treatments lower a woman's blood pressure, which helps avoid complications of high blood pressure in pregnancy. Each participant is seen regularly by the hospital doctors and midwives (as usual) and by the research team. The study will provide information to help improve the treatment of women with high blood pressure in pregnancy in the future. No serious side effects are expected from either drug. Both drugs are taken by many pregnant women worldwide and serious side effects are rare. A woman cannot take labetalol if she suffers from asthma or some heart conditions. Possible side effects do, however, include, feeling faint on standing, headache, rashes, scalp tingling, difficulty in passing urine, tummy pain, nausea, vomiting and liver damage. A woman cannot take nifedipine if she has certain heart conditions. Possible side effects include nausea, vomiting or diarrhoea, swelling of the legs, palpitations, headache and dizziness.

Where is the study run from?

The lead centre for the trial is Guy's and St Thomas Hospital, London. The maternity units in Manchester and Leicester are also taking part.

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

August 2014 to September 2015

Who is funding the study?

1. Tommy's Charity (UK)
2. Kings Health Partners Challenge Fund (UK)

Who is the main contact?

Dr Lucy Chappell  
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## Contact information

### Type(s)

Scientific

### Contact name

Dr Lucy Chappell

### Contact details

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## Additional identifiers

**EudraCT/CTIS number**

2013-003144-23

**IRAS number****ClinicalTrials.gov number****Secondary identifying numbers**

N/A

## Study information

**Scientific Title**

Labetalol or nifedipine for treating chronic hypertension in pregnancy

**Acronym**

PANDA

**Study hypothesis**

Nifedipine is as effective as labetalol at controlling blood pressure in women with chronic hypertension in pregnancy, with greater efficacy in women of African/ Caribbean family origin

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

1. East of England Cambridge East Research Ethics Committee (REC), 03/02/2014, ref: 13/EE/0390
2. Medicines and Healthcare products Regulatory Agency (MHRA), 31/01/2014, ref: 14523/0251/001-0002

**Study design**

Randomised controlled trial (feasibility study)

**Primary study design**

Interventional

**Secondary study design**

Randomised controlled trial

**Study setting(s)**

Hospital

**Study type(s)**

Treatment

**Participant information sheet**

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

## Condition

Chronic hypertension in pregnancy

## Interventions

Women will be randomised to one of two treatments: labetalol or nifedipine, with the dose adjusted for blood pressure control.

## Intervention Type

Drug

## Phase

Not Applicable

## Drug/device/biological/vaccine name(s)

Labetalol, nifedipine

## Primary outcome measure

As of 24/02/2016:

1. Primary clinical outcome measure: Highest systolic blood pressure (BP) between randomisation and delivery (highest of any recorded systolic BP measurement made between gestation at randomisation and gestation at delivery, excluding recordings made on the day of delivery and in addition average systolic BP during each pregnancy between randomisation and delivery will be calculated (using all available systolic BPs taken clinically using area under the curve by trapezium method)
2. Primary process outcome measure: Number of women enrolled per site per month (calculated at end of trial as total number of women enrolled per site divided by number of months of enrolment at that site)

Previous:

1. Primary clinical outcome measure: Highest systolic blood pressure between randomisation and delivery (highest of any recorded systolic blood pressure measurement made between gestation at randomisation and gestation at delivery, excluding recordings made in labour)
2. Primary process outcome measure: Number of women enrolled per site per month (calculated at end of trial as total number of women enrolled per site divided by number of months of enrolment at that site)

## Secondary outcome measures

Clinical:

1. Maternal outcomes including:
  - 1.1. Maternal morbidity or mortality (pre-eclampsia, eclampsia, intracranial haemorrhage or infarct, myocardial ischaemia/ infarction, intubation, pulmonary oedema, hepatic dysfunction, acute renal insufficiency, placental abruption, post-partum haemorrhage) (assessed on maternal discharge after delivery)
  - 1.2. Gestation at delivery (assessed at delivery)
  - 1.3. Mode of delivery (assessed at delivery)
  - 1.4. Indication for delivery (assessed at delivery)
  - 1.5. Number of episodes of systolic BP  $\geq 160$ mmHg,  $\geq 150$ mmHg (including home monitoring) (assessed between randomisation and delivery, excluding recordings made in labour)
  - 1.6. Diastolic BP  $< 80$ mmHg (assessed between randomisation and delivery, excluding recordings made in labour)
  - 1.7. Need for additional oral or parenteral antihypertensive medication (assessed between

randomisation and delivery)

2. Perinatal outcomes including:

2.1. Neonatal morbidity (admission to neonatal unit (length and place of stay), respiratory distress syndrome, need for ventilator support, intraventricular haemorrhage, confirmed infection, necrotising enterocolitis, seizures, encephalopathy, retinopathy of prematurity, other indications and main diagnoses related to neonatal unit admission) (assessed on discharge of infant)

2.2. Stillbirth (assessed at time of death)

2.3. Neonatal death (assessed at time of death)

2.4. Birth weight (assessed at delivery)

2.5. Birth weight centile (assessed at delivery)

2.6. Umbilical artery pH at birth (assessed at delivery)

3. Health resource use outcomes including:

3.1. Number of antenatal attendances (clinic and day unit) (assessed on maternal discharge)

3.2. Maternal admission nights (ward, delivery suite, intensive care) (assessed on maternal discharge)

3.3. Neonatal admission nights (including level of care) (assessed on discharge of infant)

4. Process:

4.1. Medication adherence (through self-report and pill count) (assessed as average of self-report and average of pill count checked at each visit between randomisation and delivery)

4.2. Side-effects of medication (assessed through direct questioning at each antenatal visit between randomisation and delivery)

4.3. Satisfaction with medication (assessed through postnatal questionnaire)

**Overall study start date**

14/08/2014

**Overall study end date**

31/05/2016

## Eligibility

**Participant inclusion criteria**

1. Chronic hypertension (defined as diastolic BP  $\geq$ 90mmHg present at booking or before 20 weeks' gestation, or requiring treatment outside pregnancy and/or at time of referral)

2. Gestation 12-28 weeks at recruitment

3. Singleton pregnancy

4. Able to provide informed consent

5. Age  $\geq$ 18 years

**Participant type(s)**

Patient

**Age group**

Adult

**Lower age limit**

18 Years

**Sex**

Female

**Target number of participants**

114

**Participant exclusion criteria**

1. Contraindication to labetalol (including asthma, uncontrolled heart failure, Prinzmetal's angina, marked bradycardia, hypotension, sick sinus syndrome, second- or third- degree AV block, cardiogenic shock, metabolic acidosis, severe peripheral arterial disease; phaeochromocytoma) or nifedipine (including cardiogenic shock; advanced aortic stenosis; within 1 month of myocardial infarction; unstable or acute attacks of angina)
2. Insufficient understanding of the trial

**Recruitment start date**

14/08/2014

**Recruitment end date**

30/09/2015

**Locations****Countries of recruitment**

England

United Kingdom

**Study participating centre**

Womens Health Academic Centre, St Thomas Hospital

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United Kingdom

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**Sponsor information****Organisation**

King's College London, Guy's and St Thomas's NHS Foundation Trust (UK)

**Sponsor details**

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**Sponsor type**

Hospital/treatment centre

**ROR**

<https://ror.org/00j161312>

## **Funder(s)**

**Funder type**

Charity

**Funder Name**

Tommy's Baby Charity

**Alternative Name(s)**

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

Other non-profit organizations

**Location**

United Kingdom

**Funder Name**

King's Health Partners

**Alternative Name(s)**

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

Universities (academic only)

**Location**

United Kingdom

# Results and Publications

## Publication and dissemination plan

Not provided at time of registration

## Intention to publish date

## 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?
<a href="#">Results article</a>	results	01/11/2017		Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No