

# Use of a nitric oxide (ISMN) for the PREVENTION and MANAGEMENT of pre-eclampsia (pilot study)

<b>Submission date</b> 29/11/2006	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
<b>Registration date</b> 21/12/2007	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol
<b>Last Edited</b> 03/03/2009	<b>Condition category</b> Pregnancy and Childbirth	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

**Plain English summary of protocol**  
Not provided at time of registration

## Contact information

**Type(s)**  
Scientific

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## Additional identifiers

**Protocol serial number**  
FMI-63194

## Study information

**Scientific Title**

A pilot study to evaluate glyceryl trinitrate (GTN) as a novel therapeutic for the prevention and treatment of pre-eclampsia

**Study objectives**

CIHR Grant Submission Title: Pre-eclampsia: Fetal and Maternal Outcomes and Innovative Therapies

To determine if exogenous glyceryl trinitrate (GTN), compared to placebo, will be effective at preventing the development and/or progression of clinical pre-eclampsia.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board, Kingston, Ontario (Canada) approved on the 20th September 2002 (ref: ANAT-017-02)

**Study design**

Randomised, multicentre, blinded, placebo-controlled trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

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

Pre-eclampsia

**Interventions**

The study is a randomised blinded drug/placebo trial. The randomisation scheme was prepared by an independent statistician prior to initiation of the pilot study, and prepared in blocks for if and when Ottawa Hospital comes on board. The study investigators, associated staff, outcome assessor, data analyst and the study participants will all be blinded to the treatment allocation. ISMN and placebo capsules will be prepared to have identical shape, size, color, smell and feel. No form of identification labeling will be visible on either intervention. When a suitable participant is identified, the research nurse coordinator will explain the details and potential risks and benefits of the study. If consent is granted, the research nurse coordinator will determine the treatment assignment for that subject by calling the research pharmacist who will provide the next code indicating the treatment for a given patient. Patients will then be provided with an appropriately labeled package of pills prepared by the hospital pharmacy.

**Prevention Arm:**

Experimental intervention: Daily dose of low dose Isosorbide-5-mononitrate (ISMN) (30 mg) beginning after 20 weeks gestation till delivery.

Control intervention: Matching placebo containing lactose. Patients randomly assigned to either receive low dose ISMN (30 mg) as stated above or placebo.

**Management Arm:**

Experimental intervention: Daily dose of low dose Isosorbide-5-mononitrate (ISMN) (30 mg)

following diagnosis of pre-eclampsia after 24 weeks gestation till delivery.  
Control intervention: Matching placebo containing lactose. Patients randomly assigned to either receive low dose ISMN (30 mg) as stated above or placebo.

In both arms of the study, patients will receive standard clinical care. Total duration of treatment in each arm is flexible and based on each individual participant. There is no follow-up after delivery.

### **Intervention Type**

Drug

### **Phase**

Not Applicable

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

Glyceryl trinitrate

### **Primary outcome(s)**

Prevention arm: incidence of pre-eclampsia in the ISMN/placebo groups, measured at delivery  
Treatment arm: randomisation-to-delivery interval between ISMN/placebo groups, measured at delivery

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

1. Serial change in biochemical markers in treatment/no treatment groups in each of the studies, measured at routine obstetrical visits until delivery (generally every 2 weeks)
2. Incidence of any side effects (major or minor), measured at routine obstetrical visits until delivery (generally every 2 weeks)
3. Neonatal outcomes (composite of neonatal morbidity), measured at delivery

### **Completion date**

31/12/2009

## **Eligibility**

### **Key inclusion criteria**

Women of childbearing years (approximately 18 - 42 years).

#### **Prevention arm:**

All women with a past obstetrical history of one or more cases of severe early onset pre-eclampsia or later onset severe pre-eclampsia associated with haemolysis, elevated liver enzymes, low blood levels of platelets (HELLP) syndrome.

#### **Treatment arm:**

All women that have been diagnosed with pre-eclampsia that are being followed clinically and that provide informed consent. For a diagnosis of pre-eclampsia a patient must meet all three criteria:

1. Systolic blood pressure greater than 140 mmHg or an increase of 30 mmHg from the participants baseline (with that increase present at two measurements taken 6 hours apart)
2. Diastolic blood pressure greater than 90 mmHg or an increase of 15 mmHg from the participants baseline (with that increase present at two measurements taken 6 hours apart)
3. Proteinuria greater than 0.3 g in 24 hour urine or 2+ on dipstick

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Sex**

Female

**Key exclusion criteria**

Potential women excluded are those:

1. That have a contraindication to use of isosorbide mononitrate (ISMN)
2. That have either a maternal or foetal indication for delivery
3. That have a diagnosis of severe pre-eclampsia (diastolic blood pressure greater than 100 mmHg; proteinuria greater than 1 g/d), eclampsia, or HELLP syndrome at time of recruitment

**Date of first enrolment**

01/01/2007

**Date of final enrolment**

31/12/2009

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

Canada

**Study participating centre****Clinical Research Centre**

Kingston

Canada

K7L 2V7

**Sponsor information****Organisation**

Queen's University (Canada)

**ROR**

<https://ror.org/02y72wh86>

## **Funder(s)**

### **Funder type**

Research organisation

### **Funder Name**

Canadian Institutes of Health Research (CIHR) (Canada) - <http://www.cihr-irsc.gc.ca> (ref: FMI-63194)

## **Results and Publications**

### **Individual participant data (IPD) sharing plan**

#### **IPD sharing plan summary**

Not provided at time of registration