

# Continuous compared to intermittent bladder catheterisation for epidural analgesia in labour

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## Plain English summary of protocol

### Background and study aims

The pain that women experience during labour varies greatly from little to extremely distressing pain. Once an epidural catheter has been inserted through the spine into the epidural space, local anaesthetic agents are injected to numb the nerves carrying pain signals to the brain. Epidural analgesia is considered to be the most efficient method of pain relief during labour. In high-income countries rates for labour epidural analgesia are at 10% to 64%. Nerve signals controlling urination are also affected by the epidural, such that 30% of the patients with epidural analgesia find it difficult to pass urine during labour. To overcome this problem, after an epidural is placed, the bladder can be emptied by continuous drainage with a catheter left in place for the duration of labour and delivery or periodically emptied at least every 4 hours. The evidence on which is the better method to effectively drain the bladder is inconclusive.

Preliminary data suggest that of the two methods, continuous drainage compared to periodic emptying, may reduce the need for caesarean delivery but may increase the risk of bleeding at delivery. This study aims to compare continuous to periodic bladder drainage for bladder care during epidural analgesia in labour, primarily on the outcomes of caesarean section and bleeding at delivery. Other labour and delivery, and baby outcomes will also be evaluated.

### Who can participate?

Adult women in labor aged between 18 and 45 years old after the successful commencement of epidural analgesia

### What does the study involve?

Once epidural analgesia is successfully administered during labor, participants will be divided into two groups based on their preference for bladder catheterization. For those opting for continuous catheterization, a 16F Foley catheter will be inserted using sterile techniques, with its balloon inflated to 10 ml to maintain its position until after delivery, including perineal repair if necessary. Alternatively, participants preferring intermittent catheterization will undergo in-and-out catheterization every 4 hours, or more frequently if their bladder is notably distended or they feel the urge to void. This method ensures bladder comfort and management during labor. Randomization into either group will be conducted through opaque sealed numbered

envelopes, with the sequence predetermined using an online generator in blocks of 4 or 8, facilitated by an impartial investigator. Regardless of group allocation, all participants will receive standard labor care throughout the study.

What are the possible benefits and risks of participating?

The two interventions evaluated in this study are commonly applied as standard care to ensure bladder emptying after epidural analgesia during labour. No major harm is anticipated with either intervention. Available data on adverse outcomes do not indicate a major difference between the study interventions. Of the study's primary outcomes of caesarean delivery and postpartum haemorrhage, the eventual result could be as hypothesised, equivalent or even contrary to our hypothesis.

Where is the study run from?

University Malaya Medical Centre

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

September 2023 to May 2025

Who is funding the study?

University Malaya Medical Centre

Who is the main contact?

Prof Tan Peng Chiong, [pctan@um.edu.my](mailto:pctan@um.edu.my)

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### ClinicalTrials.gov (NCT)

Nil known

### Protocol serial number

Nil known

# Study information

## Scientific Title

Continuous compared to intermittent bladder catheterisation for epidural analgesia in labour: a randomized controlled trial

## Study objectives

Comparing intermittent to continuous bladder catheterization for labour epidural analgesia:  
1. Caesarean delivery is reduced and 2. Postpartum haemorrhage is increased.

## Ethics approval required

Ethics approval required

## Ethics approval(s)

approved 21/02/2024, Medical Research Ethics Committee Universiti Malaya Medical Centre (Lembang Pantai, Kuala Lumpur, 59100, Malaysia; +60 (0)3-79493209/2251; ummc-mrec@ummc.edu.my), ref: 20231229-13192

## Study design

Single-centre interventional randomized controlled trial

## Primary study design

Interventional

## Study type(s)

Treatment, Efficacy

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

Epidural analgesia in labour

## Interventions

After the successful commencement of epidural analgesia

1. For participants randomised to continuous bladder catheterisation, the 16F Foley catheter will be inserted under a standard aseptic technique. The balloon will be inflated to 10 ml. The catheter will be left in place until after delivery (to cover perineal repair).

OR

2. For participants randomised to intermittent bladder catheterisation, in and out bladder catheterisation will be performed under a standard aseptic technique every 4 hours (or earlier if the bladder is clinically distended or there is the urge to void).

## Method

Women who requested epidural analgesia in labor will be assessed for eligibility. Potentially eligible patients will be given the 'Patient Information Sheet', encouraged to ask about the study and have their queries answered. After the successful epidural, written informed consent patient will be obtained, and randomisation performed without delay to receive intermittent (IC) or continuous indwelling bladder catheterization (CC).

Randomisation will be by the opening of an opaque sealed numbered envelope containing the allocated intervention. The randomisation sequence will be generated using an online generator in blocks of 4 or 8 by an investigator not involved in trial recruitment. The lowest numbered envelope will be opened for the newest recruit.

Standard labour care will be provided to all participants.

### **Intervention Type**

Procedure/Surgery

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

The following primary outcome variables will be measured using data collected in medical notes during the delivery:

1. Delivery blood loss ( $\geq 500$  ml)
2. Cesarean delivery

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

The following secondary outcome variables will be measured using data collected in medical notes during the delivery:

1. Epidural insertion to second stage interval
2. Epidural insertion to delivery interval
3. Epidural insertion to removal interval
4. Epidural insertion to discharge interval
5. Mode of delivery (indication for caesarean)
6. Perineal condition
7. Estimated delivery blood loss
8. Birth weight
9. Apgar score at 1 and 5 minutes
10. Umbilical cord artery blood pH
11. Neonatal intensive care admission (and indication)
12. Satisfaction with allocated bladder catheterisation regimen 0-10 NRS

### **Completion date**

01/05/2025

## **Eligibility**

### **Key inclusion criteria**

1. Received intrapartum epidural analgesia
2. 1st stage of labour (at least 3 cm dilated and 2 contractions every 10 minutes)
3.  $\geq 37$  weeks gestation
4. Age  $\geq 18$  years old
5. Singleton fetus
6. Cephalic presentation
7. Reassuring fetal heart rate tracing

### **Participant type(s)**

Patient

### **Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Upper age limit**

45 years

**Sex**

Female

**Key exclusion criteria**

1. Latex allergy
2. BMI  $\geq 35$
3. Indwelling urinary catheter required
4. Cannot communicate in English or Malay

**Date of first enrolment**

01/05/2024

**Date of final enrolment**

30/04/2025

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

Malaysia

**Study participating centre**

**University Malaya Medical Centre**

Jalan Universiti, Lembah Pantai

Petaling Jaya

Malaysia

59100

**Sponsor information****Organisation**

University Malaya Medical Centre

**ROR**

<https://ror.org/00vkrxq08>

# Funder(s)

## Funder type

Hospital/treatment centre

## Funder Name

Universiti Malaya

## Alternative Name(s)

University of Malaya, University Malaya, Malayan University, King Edward VII College of Medicine, Raffles College, University of Malaya in Singapore, , , , UM

## Funding Body Type

Government organisation

## Funding Body Subtype

Universities (academic only)

## Location

Malaysia

# Results and Publications

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be available upon request from Prof Tan Peng Chiong, pctan@um.edu.my subject to institutional review board approval.

## IPD sharing plan summary

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes