

# Effectiveness of remimazolam on preventing adverse reactions caused by carboprost tromethamine during cesarean section

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<b>Registration date</b> 16/11/2023	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 14/11/2023	<b>Condition category</b> Pregnancy and Childbirth	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

This study aims to evaluate the effectiveness of intravenous administration of remimazolam in preventing adverse reactions triggered by carboprost tromethamine during cesarean section procedures performed under combined spinal and epidural anesthesia (CSEA), thereby improving sedative effects. This approach holds promising potential for widespread application.

### Who can participate?

Parturients aged between 24-45 years old scheduled for cesarean sections at risk of postpartum hemorrhage at The third hospital of Baogang Group, China

### What does the study involve?

The participants will be assigned via random number table method to either a study group or a control group, resulting in 100 cases in each. All parturients will receive CSEA during cesarean section, followed by administration of carboprost tromethamine (250µg) for preventing postpartum hemorrhage after childbirth. CSEA is performed with 1.8-2 mL of 0.5% bupivacaine and 7-10 mL of 2% lidocaine. The study group will be given remimazolam via intravenous infusion at a rate of 0.3 mg/kg/hr commencing one minute prior to CSEA and concluding with a final dosage adjustment 20 minutes preceding the end of surgery, while the control group will be given the same volume of saline within this time frame. Primary outcome measures were adverse reactions and sedative effects of the parturients.

### What are the possible benefits and risks of participating?

Benefits and risks not provided at time of registration.

### Where is the study run from?

The Third Hospital of the Baogang Group (China)

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

October 2022 to September 2023

Who is funding the study?  
The Baotou Science and Technology Bureau (China)

Who is the main contact?  
Dr Jianjun Fan, fanjianjun2065@163.com (China)

## Contact information

### Type(s)

Public, Scientific, Principal Investigator

### Contact name

Dr Jianjun Fan

### Contact details

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## Additional identifiers

### EudraCT/CTIS number

Nil known

### IRAS number

### ClinicalTrials.gov number

Nil known

### Secondary identifying numbers

Nil known

## Study information

### Scientific Title

Effectiveness of remimazolam on preventing adverse reactions induced by carboprost tromethamine during cesarean section

### Study objectives

Intravenous administration of remimazolam effectively prevents adverse reactions induced by carboprost tromethamine during cesarean section performed under CSEA, thereby improving sedative effects.

### Ethics approval required

Ethics approval required

### **Ethics approval(s)**

Approved 15/12/2022, Ethics Committee of The third hospital of the Baogang Group (Qingnian Road, Kunqu District, Baotou City, Inner Mongolia, 014010, China; +86-0472-2166970; bangongshi@cohf.cn), ref: 2022.02/22-28

### **Study design**

Single-center single-blind randomized controlled trial

### **Primary study design**

Interventional

### **Secondary study design**

Randomised controlled trial

### **Study setting(s)**

Hospital

### **Study type(s)**

Safety

### **Participant information sheet**

No participant information sheet available

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

Cesarean section women at risk of postpartum hemorrhage

### **Interventions**

The participants will be assigned via random number table method to either a study group or a control group. All parturients will receive combined spinal and epidural anesthesia (CSEA) during cesarean section, followed by administration of carboprost tromethamine (250µg) for preventing postpartum hemorrhage after childbirth. Combined spinal and epidural anesthesia will be performed with 1.8-2 mL of 0.5% bupivacaine and 7-10 mL of 2% lidocaine. The study group will be given remimazolam via intravenous infusion at a rate of 0.3 mg/kg/hr commencing one minute prior to CSEA and concluding with a final dosage adjustment 20 minutes preceding the end of surgery, while the control group will be given the same volume of saline within this time frame. Primary outcome measures were adverse reactions and sedative effects of the parturients.

### **Intervention Type**

Procedure/Surgery

### **Primary outcome measure**

1. Postpartum bleeding volume measured using patient records. The bleeding volume of parturients at 2 hours and 24 hours postpartum and the time to cessation of bleeding are recorded and compared between the two groups.
2. Sedation effect measured using the Ramsay Sedation Scale (RSS) to assess intraoperative sedation levels. The scale is as follows: 1 point: Anxious, restless; 2 points: Awake, calm, cooperative; 3 points: Drowsy, responsive to commands; 4 points: Light sleep, easily awakened; 5 points: Asleep, sluggish response to stimulation; 6 points: Deep sleep, no response to

stimulation. Sedation levels were categorized as follows: 1 point indicated inadequate sedation, 2-4 points indicated moderate sedation, and 5-6 points indicated excessive sedation. Sedation efficacy (%) = (Sum of cases with 3-4 points) / Total cases × 100%.

3. Adverse reactions: Adverse reactions (nausea and vomiting, stomach pain, chest pain, palpitations, elevated blood pressure, headache) occurring between admission and the end of surgery. The severity of nausea and vomiting is graded as follows: Level 0: No nausea or vomiting; Grade 1: nausea but no vomiting; Grade 2: Nausea or vomiting 1-2 times within an hour; Level 3: Nausea or vomiting three or more times within an hour

### **Secondary outcome measures**

Satisfaction score measured using a patient questionnaire of the satisfaction of the whole treatment process, which is divided into very satisfied, satisfied and dissatisfied, before discharge

### **Overall study start date**

01/10/2022

### **Completion date**

30/09/2023

## **Eligibility**

### **Key inclusion criteria**

1. Aged 24-45 years old
2. Indication for cesarean section, planned elective cesarean section
3. American Society of Anesthesiologists (ASA) grade I-II
4. Presence of risk factors for uterine atony, such as scar pregnancy, multiple pregnancies, macrosomia, psychological stress, and making natural labor inappropriate.

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

Patient

### **Age group**

Adult

### **Lower age limit**

24 Years

### **Upper age limit**

45 Years

### **Sex**

Female

### **Target number of participants**

100

### **Total final enrolment**

100

**Key exclusion criteria**

1. Genital tract anomalies
2. Coagulation disorders
3. Allergy to drugs and related solvents intended for use during surgery
4. Pre-existing conditions such as severe gastric ulcers, duodenal ulcers, reflux esophagitis, or other conditions that could lead to symptoms such as nausea, vomiting, chest discomfort, palpitations, abdominal pain, or diarrhea

**Date of first enrolment**

01/10/2022

**Date of final enrolment**

31/07/2023

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

China

**Study participating centre**

**The third hospital of Baogang Group**

15, Qingnian Road, Kunqu District

Baotou City

China

014010

**Sponsor information****Organisation**

Baotou Science and Technology Bureau ()

**Sponsor details**

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**Sponsor type**

Government

**Website**

<http://kjj.baotou.gov.cn/>

# Funder(s)

## Funder type

Government

## Funder Name

Baotou Science and Technology Bureau

## Alternative Name(s)

## Funding Body Type

Government organisation

## Funding Body Subtype

Local government

## Location

China

# Results and Publications

## Publication and dissemination plan

Planned publication in a high-impact and peer-reviewed journal; The European Review for Medical and Pharmacological Sciences

## Intention to publish date

31/12/2024

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from the corresponding author Dr Jianjun Fan, fanjianjun2065@163.com (China)

## IPD sharing plan summary

Other