

# Perioperative assessment and management of cardiovascular risk in patients undergoing noncardiac surgery who under the care of surgical and medical co-management.

<b>Submission date</b> 16/12/2023	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 19/12/2023	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 17/01/2025	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aim

Perioperative myocardial injury/infarction (PMI) following noncardiac surgery has been increasingly recognized as a frequent cardiac complication, which occurs in at least 8% of elective procedures, and 20% of major surgeries. Moreover, PMI is independently associated with an increased risk of cardiovascular (CV) morbidity and mortality at 30 days and up to 1 year after noncardiac surgery. The practice of surgical and medical co-management (SMC) is gaining popularity, as there has been a rapid increase in the percentage of noncardiac surgical patients under SMC, mainly in the United States. However, little is known about the incidence, predictors, or impact of PMI on 30-day mortality in intermediate- or high-risk noncardiac surgery patients under the care of the SMC model in a real-world clinical setting. The study team is a perioperative SMC team with 35 years of clinical experience in perioperative management. This study aims to evaluate the incidence, risk, and impact of PMI in patients at increased CV risk who underwent intermediate- or high-risk noncardiac surgery under the SMC model.

### Who can participate?

Patients aged  $\geq 65$  years old, or  $\geq 50$  years old with a history of cardiovascular disease (CVD) or CV risk factors (e.g., smoking, obesity, hypertension, diabetes, and dyslipidemia), and treated with intermediate- or high-risk noncardiac surgery and with a postoperative stay of  $\geq 2$  days during hospitalization in our department between January 2017 and December 2022.

### What does the study involve?

Patients can voluntarily participate in this study if they are fully aware of our study. All patients were routinely treated at the discretion of the SMC team during hospitalization, following the updated clinical guidelines without other intervention. The SMC model was initiated when surgical intervention was indicated and throughout the entire perioperative period. The incidence, risk factors, and impact of PMI on 30-day mortality were analyzed. The ability of the Revised Cardiac Risk Index (RCRI), frailty, and their combination to predict PMI was evaluated.

What are the possible benefits and risks of participating?

Patients' perioperative condition will be better monitored and guided if they are participating in this study. This study does not involve specific study drugs, and there are no prescription requirements. Based on the study itself, it will not bring any risk or adverse reactions for patients.

Where is the study run from?

Second Medical Center, Chinese PLA General Hospital (China)

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

January 2016 to December 2023.

Who is funding the study?

National Clinical Research Center for Geriatric Diseases (China)

Who is the main contact?

Dr. Xi, xishaozhi@163.com

## Contact information

### Type(s)

Principal investigator

### Contact name

Prof Linggen Gao

### Contact details

No. 28 Fu Xing Road

Beijing

China

100853

+8615801612879

gaolinggen@163.com

### Type(s)

Public, Scientific

### Contact name

Dr Shaozhi Xi

### Contact details

No. 28 Fu Xing Road

Beijing

China

100853

+8615724715289

xishaozhi@163.com

## Additional identifiers

# Study information

## Scientific Title

Perioperative cardiovascular risk assessment and management after intermediate- or high-risk noncardiac surgery in patients under surgical and medical co-management.

## Study objectives

This study evaluated the incidence, risk, and impact of perioperative myocardial injury/infarction (PMI) in patients at increased cardiovascular (CV) risk who underwent intermediate- or high-risk noncardiac surgery under the surgical and medical co-management (SMC) model.

## Ethics approval required

Ethics approval required

## Ethics approval(s)

approved 03/11/2016, Ethics Committee of Chinese PLA General Hospital (No. 28 Fu Xing Road, Beijing, 100853, China; +86 10 6693 7166; jfjzyygw@163.com), ref: S2023-555-01

## Study design

Single-center prospective cohort study

## Primary study design

Observational

## Study type(s)

Prevention, Screening, Treatment

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

Perioperative cardiovascular risk after intermediate- or high-risk noncardiac surgery.

## Interventions

Patients who are at increased cardiovascular risk when undergoing intermediate- or high-risk noncardiac surgery during hospitalization will be recruited. All patients will be routinely treated with perioperative management by the surgical and medical co-management (SMC) team. The SMC model is initiated when a surgical intervention is indicated and throughout the entire perioperative period. The incidence, risk factors, and impact of perioperative myocardial injury/infarction (PMI) on 30-day mortality will be analyzed.

## Intervention Type

Other

## Primary outcome(s)

Impact of perioperative myocardial injury/infarction (PMI) on 30-day mortality measured using patient medical records at one time point

## Key secondary outcome(s)

Postoperative complications measured using patient medical records at one time point include:

1. Acute coronary syndrome (ACS)
2. The Clavien-Dindo classification of surgical complications
3. 30-day mortality

**Completion date**

31/12/2023

**Eligibility****Key inclusion criteria**

1.  $\geq 65$  years old, or  $\geq 50$  years old with a history of cardiovascular disease (CVD) or CV risk factors (e.g., smoking, obesity, hypertension, diabetes, and dyslipidemia).
2. Treated with intermediate- or high-risk noncardiac surgery according to the criteria of the ESC /ESA surgical risk score and with a postoperative stay of  $\geq 2$  days.

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Senior

**Lower age limit**

50 years

**Upper age limit**

99 years

**Sex**

All

**Total final enrolment**

623

**Key exclusion criteria**

Patients were excluded if one of the following was met:

1. Cardiac surgery or MI within 14 days before admission
2. Surgery involving a cardiac surgeon
3. Low-risk noncardiac surgery
4. No cTn measurement within 14 days before surgery or 3 days after surgery
5. Elevated preoperative cTn level
6. Lost to follow-up after discharge

**Date of first enrolment**

01/01/2017

**Date of final enrolment**

31/12/2022

**Locations**

## Countries of recruitment

China

## Study participating centre

Chinese PLA General Hospital

No. 28 Fu Xing Road

Beijing

China

100853

## Sponsor information

### Organisation

Chinese PLA General Hospital

### ROR

<https://ror.org/04gw3ra78>

## Funder(s)

### Funder type

Research organisation

### Funder Name

National Clinical Research Center for Geriatric Diseases

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated during and/or analyzed during the current study will be available upon request from Dr. Xi, [xishaozhi@163.com](mailto:xishaozhi@163.com).

### IPD sharing plan summary

Available on request

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>		21/06/2024	17/01/2025	Yes	No