

# The effectiveness and safety of a drug-releasing balloon in active cancer patients presenting with ST-segment elevation myocardial infarction (heart attack)

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<b>Registration date</b> 27/09/2022	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
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## Plain English summary of protocol

### Background and aims

A primary percutaneous coronary intervention (PCI) is a procedure to open the heart artery which has blocked. A drug-eluting stent (DES) is coated with a slow-release medication to help prevent blood clots from forming in a stent. PCI with a DES is the guideline-recommended revascularization strategy in patients presenting with ST-elevation myocardial infarction (STEMI; the most serious type of heart attack). However, there are limited data on the best PCI treatment among patients with active cancer presenting with STEMI. The aim of this study is to compare the efficiency and safety of a drug-eluting balloon (DEB) versus DES during primary PCI for active cancer patients presenting with STEMI.

### Who can participate?

Patients with active cancer and presenting with STEMI within 12 hours of symptom onset

### What does the study involve?

Participants are randomly allocated to either DEB or DES treatment. The primary endpoint is major bleeding events at 1 year.

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

It is expected that the participants receiving DEB treatment could have a significantly decreased risk of major bleeding events and might have a lower death rate during the clinical follow-up. Participants may suffer from complications of acute myocardial infarction such as malignant arrhythmia, ventricular septal rupture and cardiac rupture.

### Where is the study run from?

Beijing Chaoyang Hospital, Capital Medical University (China)

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

September 2022 to January 2027

Who is funding the study?

1. Clinical Incubation Program of Beijing Chaoyang Hospital (China)
2. Beijing Municipal Administration of Hospitals (China)

Who is the main contact?

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## Contact information

### Type(s)

Principal investigator

### Contact name

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## Additional identifiers

## Study information

### Scientific Title

Comparisons of a drug-eluting balloon versus drug-eluting stent for the treatment of active cancer patients presenting with ST-segment elevation myocardial infarction: a randomized clinical trial

### Acronym

DEB-ACST

### Study objectives

It is hypothesised that a drug-eluting balloon (DEB) is superior to a drug-eluting stent (DES) in the treatment of active cancer patients presenting with ST-segment elevation myocardial infarction (STEMI).

### Ethics approval required

Old ethics approval format

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

Approval pending, Ethics Committee of Beijing Chaoyang Hospital (No.8, Gongti South Road, Chaoyang District, Beijing, China; +86 (0)10 85231484; cyylunli2019@163.com)

### **Study design**

Prospective single-center open-label superiority randomized trial with blinded evaluation of outcomes

### **Primary study design**

Interventional

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

Treatment

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

Optimal management of active cancer patients presenting with STEMI

### **Interventions**

Eligible patients are randomly assigned at a 1:1 ratio to either DEB or DES according to a computer-generated randomization schedule, which is performed by an independent authorized researcher, who is not directly involved in the research project. The details about the procedure of random allocation are blinded to all researchers. Due to the procedure itself, the interventional physicians could not be blinded to the treatment allocation, but patients and researchers who collect and analyze the data are blinded to the treatment allocation.

The PCI procedure will be performed according to current international guidelines and local practice.

In the DEB group, optimal lesion preparation by pre-dilation is required to achieve the goal of a stenosis <30% of vessel diameter, without flow-limiting dissection (grade C–F) and with thrombolysis in myocardial infarction (TIMI) flow grade 3. Subsequently, the DEB is inflated at nominal pressure (8–10 atm) for a minimum of 30 seconds. The ratio of the DEB diameter to the nominal diameter of the vessel is recommended to be between 0.8 and 1.0 to minimize the probability of coronary dissection. And the DEB length is recommended to be at least 5 mm longer than the pre-dilatation balloon to avoid geographical mismatch. A bailout stenting may be recommended if a flow-limiting dissection or a residual stenosis >30% after DEB implantation occurred. Patients with a flow-limiting dissection or a residual stenosis >30% after pre-dilation should be converted to the DES group and enter a prospective registry with the same follow-up procedures as in the randomized trial.

In the DES group, a new-generation DES will be implanted using standard techniques after accomplishing adequate lesion preparation. Post-dilation with noncompliant balloons at high pressure (12–18 atm) is recommended in this group, but the final strategy is left to the operator's discretion based on the conditions set by the individual study sites.

A successful PCI treatment is defined as a diameter stenosis (DS) <30% and TIMI flow grade 2 in the DEB group and a DS <20% and TIMI flow grade 2 in the DES group by visual assessment.

### **Intervention Type**

Procedure/Surgery

**Primary outcome(s)**

Major bleeding events measured using hospital records and telephone interviews at 6 months and 1 year

**Key secondary outcome(s)**

1. Thrombolysis in Myocardial Infarction (TIMI) grade measured using coronary angiography immediately post PCI
2. Resolution of ST-segment elevation (STR) measured using electrocardiogram at 60 min after PCI
3. Cardiac biomarkers level measured using enzyme-linked immunosorbent assay at 24 h, 48 h, and 72 h post PCI
4. Left ventricular ejection fraction (LVEF) measured using echocardiography within 3 days after PCI
5. Cardiac complications measured using hospital records during hospitalization
6. Major adverse cardiac event (MACE) measured using hospital records as well as by telephone interviews during 1-year clinical follow-up

**Completion date**

01/01/2027

## Eligibility

**Key inclusion criteria**

1. Age between 18 and 80 years
2. First STEMI attack
3. Presenting within 12 h of symptom onset
4. Active cancer

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Lower age limit**

18 years

**Upper age limit**

80 years

**Sex**

All

**Key exclusion criteria**

1. Previous myocardial infarction
2. Non-ST-segment elevation myocardial infarction and unstable angina pectoris
3. Unconsciousness or cardiogenic shock
4. Symptom onset >12 h
5. Mechanical complications
6. Historical cancer

**Date of first enrolment**

01/01/2023

**Date of final enrolment**

01/01/2025

## Locations

**Countries of recruitment**

China

**Study participating centre**

**Beijing Chaoyang Hospital, Capital Medical University**

No. 8, Gongti South Road

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## Sponsor information

**Organisation**

Scientific Research Department of Beijing Chaoyang Hospital

## Funder(s)

**Funder type**

Hospital/treatment centre

**Funder Name**

Beijing Municipal Administration of Hospitals

**Alternative Name(s)**

, Beijing Hospital Authority, Beijing Municipal. Administration of Hospitals'

**Funding Body Type**

Government organisation

**Funding Body Subtype**

Local government

**Location**

China

**Funder Name**

Investigator initiated and funded

**Funder Name**

Clinical Incubation Program of Beijing Chaoyang Hospital

## Results and Publications

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

The datasets generated during and/or analysed during the current study are not expected to be made available due to the principle of informed consent which indicated that the patient's personal data will not be public.

**IPD sharing plan summary**

Not expected to be made available