

The role of high power ultrasound in restoring blood flow for patients presenting with a major heart attack.

ACTRN12620000807954

Status	RECRUITING
Sponsor	University of Sydney
Enrollment	150 participants

Plain Language Summary

When a heart attack occurs, it happens because a blood clot blocks one of the arteries supplying the heart. Emergency treatment (like a stent or balloon procedure) can open that large blockage, but tiny micro-vessels deeper in the heart muscle often remain blocked — affecting up to 60% of heart attack patients — and there is currently no established treatment for this. This micro-vessel damage is linked to worse long-term outcomes.

This trial is testing a technique called "sonothrombolysis" — using ultrasound combined with a contrast agent (tiny micro-bubbles) — to try to break up these micro-vessel clots. The ultrasound is delivered through a handheld probe on the chest alongside standard emergency treatment. Participants are randomly assigned to either receive the real sonothrombolysis or a sham (inactive) procedure, and their heart function is monitored through imaging over six months.

You may be eligible if you are aged 30 to 80, are presenting to hospital with a heart attack (STEMI or posterior STEMI), and are eligible for emergency stenting or clot-dissolving treatment. People who have had a previous heart attack, are in cardiogenic shock, or have a known heart muscle disease would not be eligible. This study is being run across three Australian hospitals.

Key Eligibility Criteria

Inclusion (4)

- Chest Pain with ST segment elevation >0.1 mV in two contiguous leads, or ST segment depression >0.2 mV in two contiguous leads V1-V3 (consistent with a posterior STEMI)
- Eligible for emergent PCI/antithrombotic/antiplatelet therapy.
- Adequate apical and/or parasternal images by echocardiography.
- No contraindications or hypersensitivities to ultrasound contrast agents.

Exclusion (12)

- Unable to provide written consent to participate in the trial
 - Chest pain lasting >6 hours
 - Cardiogenic shock
 - Fibrinolytic therapy prior to arrival in the emergency department
 - Life expectancy of less than six months from any other co-morbidity or terminally ill
- ... and 7 more (see full listing online)

Locations (3 total)

Nepean Hospital - Kingswood, NSW,QLD, Australia
Gosford Hospital - Gosford, NSW,QLD, Australia
John Hunter Hospital - New Lambton, NSW,QLD, Australia

<https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=ACTRN12620000807954>

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