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FACTSHEET

MAT Study: Determining the effects of metformin among people with small abdominal aortic aneurysms – February 2026

The George Institute for Global Health

FACTS:

- AAA affects around 20 million people and causes ~200,000 deaths worldwide each year.
- The current practice of simply monitoring small AAAs is associated with reduced quality of life, and AAA repair carries significant risks of mortality (1-7%), as well as serious complications that occur during or around the time of an operation (up to 20%).
- A drug that inhibits AAA growth would reduce important AAA-associated events, including AAA repair and AAA mortality due to aneurysm rupture.

BACKGROUND:

- An abdominal aortic aneurysm (AAA) is an enlarged area in the lower part of the major vessel that supplies blood to the body. Most AAAs are detected when they are small, and affected patients are monitored by regular repeat imaging until their aneurysm expands to a size where surgical repair is required.
- The only current treatment is high-risk surgery. Numerous trials have been conducted in the last 20 years to try to identify an effective medical therapy for AAA, but all published trials to date have been unsuccessful.
- There is substantial epidemiological and pre-clinical evidence to suggest that a widely used, safe and low-cost drug called metformin may prevent serious AAA-related events such as ruptures, death or need for surgery, however a large-scale randomised control trial (RCT) is needed to test any such benefit reliably.

AIMS:

- The primary aim of the Metformin Aneurysm Trial (MAT) is to assess whether metformin prevents the need for AAA repair by surgery, or death from AAA rupture.
- Secondary aims include assessing the effects of metformin on other major cardiovascular events and AAA growth, whether growth occurs after surgery, or if further surgery is required. Its effect on health-related quality of life will also be examined, as well as the cost-effectiveness and cost-utility of metformin treatment.

METHODS:

- Sponsored by James Cook University, in collaboration with The George Institute and University of Leicester, MAT is a multi-centre RCT with sites in Australia, New Zealand, Sweden and the UK.
- 1,954 AAA patients will be randomised to receive 1500mg of metformin daily or a placebo.
- Participants will be followed until 616 primary outcome events have been accrued.

IMPACT

- The program will lead to the development of guidance for pregnant women exposed to extreme heat around the world.
- HiP-India will collaborate with policymakers, as well as women's and community groups in India, to identify and support local solutions for protection against extreme heat.

PROJECT CYCLE:

2019 – 2029

PARTNERS:

The George Institute, Australia
James Cook University, Australia
University of Leicester, UK

SUPPORTERS:

The George Institute for Global Health
National Health and Medical Research Council (NHMRC), Australia
James Cook University, Australia
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