

## News Release

### ESC LATE BREAKING TRIAL

Contact: [lynn.mackay-thomas@bihs.org.uk](mailto:lynn.mackay-thomas@bihs.org.uk)

Contact number: 0300 302 3433

## First UK study to confirm that ethnicity matters for hypertension treatment

**UK, 29 August 2025:** Ground-breaking results from the [AIM-HY INFORM trial](#), presented today at the European Society of Cardiology Congress in Madrid, reinforce the critical importance of personalised medicine in hypertension care. The trial is the first UK study to confirm that ethnicity is a relevant consideration in hypertension drug response, and it does so by comparing within-person responses to three common blood pressure treatments.

**About Hypertension - the cornerstone of prevention** Blood pressure is the most powerful predictor of future health in all ethnicities. High blood pressure (hypertension) is the leading modifiable risk factor for heart attacks, strokes, kidney failure, dementia, and premature death. It affects one in three adults yet often goes undetected because it has no symptoms.

Unlike many chronic conditions, hypertension can be easily identified and controlled. Regular monitoring, healthier lifestyles, and effective medication can transform outcomes. By prioritising blood pressure detection and management, health systems can prevent more serious illness, reduce healthcare costs, and save lives.

**The AIM-HY INFORM trial** funded by the British Heart Foundation and the Medical Research Council, involving 829 participants from Black, South Asian and White backgrounds, uniquely employed a crossover design where each participant received multiple antihypertensive treatments, allowing precise within-person comparisons. The trial results, supported by the Department of Health and Social Security, confirm significant differences between Black, South Asian and White patients in responses to both single-drug and dual-combination antihypertensive therapies among different ethnic groups in the UK.

Health Minister Stephen Kinnock said: *"Our 10 Year Health Plan focuses on preventing illness rather than just treating it, and personalised medicines are a key part of this approach. This research will help doctors give patients the most effective treatments for them individually – whilst also supporting our goal to tackle health inequalities. We want to save more lives from major diseases like heart disease. That's why through the NIHR, we are spending £50 million on new cardiovascular research. This will improve people's health and boost the economy."*

**These results should serve** to inform more tailored and effective treatments and offer potential cost savings as well as significantly enhance patient outcomes through more targeted therapies. The trial also highlighted biological mechanisms underlying these variations, such as notably lower plasma renin levels in Black patients, providing crucial insights into why certain medications perform differently across groups. They robustly demonstrate that ethnicity-related differences in drug response have clear biological foundations and could transform outcomes for the > 7 million people of Black and South Asian heritage in the UK, of which at least 2 million require treatment for hypertension.

### Key Findings:

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Address: British & Irish Hypertension Society, Unit 2, Q Court, Quality Street, Edinburgh EH4 5BP

### Single-Drug Therapy Results:

- Black patients: The calcium channel blocker amlodipine and diuretic chlortalidone each lowered blood pressure by approximately 11 mmHg more than the ACE inhibitor lisinopril, confirming current NICE guidance to avoid ACE inhibitors as initial treatments in this group.
- South Asian patients: Amlodipine and chlortalidone were also more effective than lisinopril, reducing blood pressure by about 4 mmHg more, suggesting a potential need to reconsider guidelines for this population.
- White patients: Lisinopril remained highly effective as a first-line therapy, aligning with existing clinical practice.

### Dual-Combination Therapy Results:

- Across all ethnic groups (White, Black, and South Asian), a combination of chlortalidone and the potassium-sparing diuretic amiloride emerged as significantly more effective than conventional dual combinations (ACE inhibitor with calcium channel blocker or diuretic). This combination delivered an additional average reduction in systolic blood pressure of 4-10 mmHg compared to the traditional lisinopril + amlodipine regime.
- In Black patients, dual combinations containing chlortalidone (particularly chlortalidone plus amlodipine or chlortalidone plus ACE inhibitor) were notably more effective than combinations without it, outperforming traditional ACE inhibitor-based regimens by approximately 8 mmHg.

Professor Ian Wilkinson, of University of Cambridge Division of Experimental Medicine and Immunotherapeutics, Chief Investigator of the AIM-HY INFORM trial Chief and President of the British & Irish Hypertension Society, stated:

*“These important findings could influence treatment choices for millions with high blood pressure. They confirm NICE is right to base initial single-drug therapy on ethnicity but reveal that the most effective two-drug diuretic combination (water tablets) is not currently recommended, regardless of ethnicity. Overall, these drugs were well tolerated, and the BIHS will urge NICE to review its guidance in light of these results.”*

Supportive of Professor Wilkinson’s comment, Dr Esther Mukuka, NIHR Director of Research Inclusion, said: *“This breakthrough could transform care for millions of people of Black and South Asian heritage in the UK - helping doctors prescribe more effective, tailored treatments, improving outcomes, and reducing costs. This research shows the true power of personalised medicine to change lives.”*

**NICE Guidance** These results confirm the validity of current NICE guidelines recommending different first-line hypertension treatments based on ethnicity, particularly in Black patients.

Importantly, the trial has generated new evidence on optimal first-line antihypertensive treatments for Asian patients, addressing a significant evidence gap in current guidance. The findings indicate a clear benefit from calcium channel blockers and diuretics over ACE inhibitors in this group.

The British and Irish Hypertension Society is now working closely with NICE to ensure the guidelines fully reflect the latest data on effective hypertension treatment across all ethnic groups, further supporting equitable, evidence-based care.

Professor Philip Chowienczyk, from King's College London and Lead Primary Investigator for the AIM-HY program that include this trial concluded:

*"The AIM-HY trial will help us give everybody in the UK the best treatment for hypertension by tailoring treatment according to ethnicity. The next challenge is to be able to use biological markers to predict the best treatments and to develop treatments that are equally effective in all ethnic groups."*

**For further information, expert comment, interview requests, or access to the data, please contact:**

[lynn.mackay-thomas@bihs.org.uk](mailto:lynn.mackay-thomas@bihs.org.uk)

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