New blood test diagnoses more women with heart attack but gender gap in treatment remains

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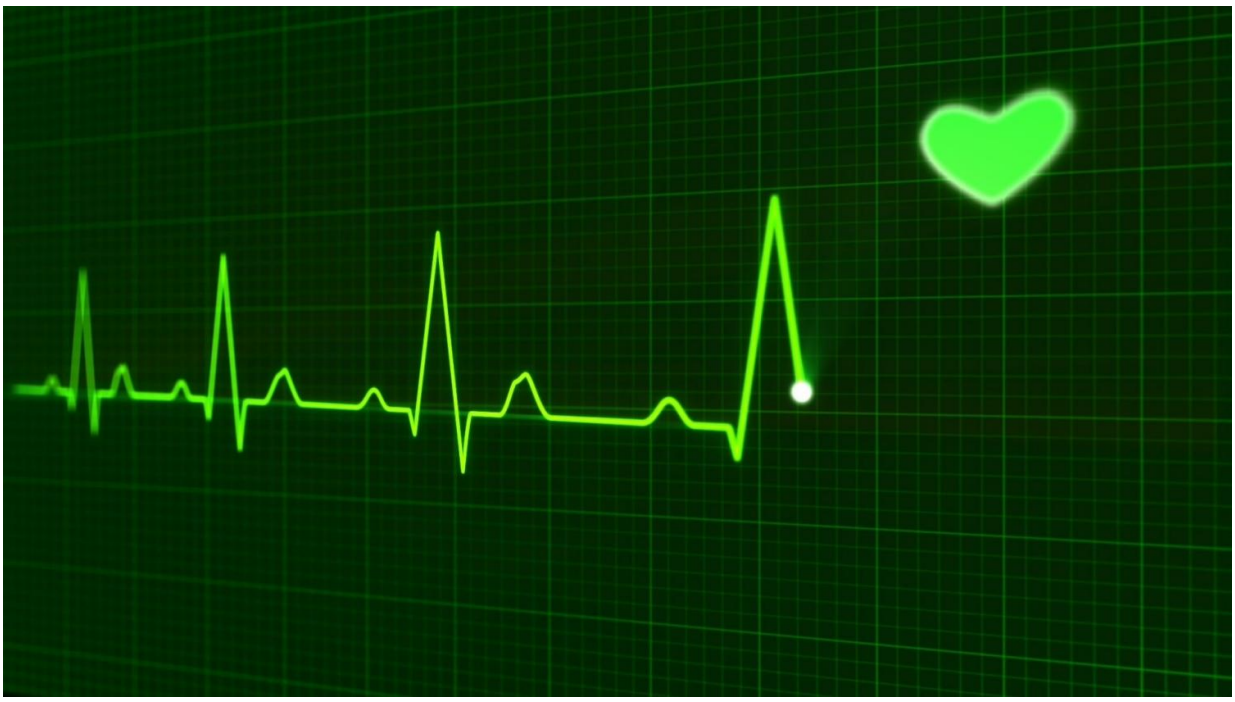

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Women receive poorer heart attack treatment than men, even when rates of diagnosis are the same, according to new research funded by the British Heart Foundation (BHF) and published in the *Journal of the American College of Cardiology*.

The clinical trial, led by researchers from the University of Edinburgh, sought to understand the impact of using the high sensitivity troponin blood test for heart attacks but with specific thresholds for men and women. This increased the number of women identified by 42 percent—from 3,521 to 4,991 women out of a total of 22,562 women.

This increase meant a similar proportion of men and women were found to have a heart attack or injury to the heart muscle after going to the Emergency Department with chest pain (22 percent of women and 21 percent of men).

But the researchers found that, despite the improvement in diagnosis, women were about half as likely as men to receive recommended heart attack treatments. This included coronary revascularisation in which a stent is fitted (15 percent versus 34 percent), dual antiplatelet therapy (26 percent versus 43 percent) and preventative treatments including statins (16 percent versus 26 percent).

The improvement in diagnosis also did not lead to a decrease in the number of women who experienced another heart attack, or died from cardiovascular disease within a year.

The research follows a BHF briefing released two weeks ago that found a failure to treat women and men equally has led to more than 8,000 women in England and Wales dying needlessly from heart attacks over the past decade. The charity says that a misperception that a heart attack is a man's disease, and unconscious biases in the delivery of healthcare, are leading to delayed treatment and poorer survival chances for women who suffer heart attacks.

Dr. Ken Lee, BHF Clinical Research Fellow and study author at the University of Edinburgh, said: "Diagnosis of a heart attack is only one piece of the puzzle. The way test results and patient history are

interpreted by healthcare professionals can be subjective, and unconscious biases may influence the diagnosis. This may partly explain why, even when rates of diagnosis are increased, women are still at a disadvantage when it comes to the treatments they receive following a heart attack."

The research supports previous work by the team in Edinburgh on improving heart attack diagnosis. When people arrive at the Emergency Department and are suspected of having a heart attack, they are given a troponin blood test to diagnose the cause. Hospitals tend to use a uniform blood test for men and women, which works by measuring troponin in the blood—a protein released from the damaged heart following a heart attack.

However, the same team in Edinburgh has shown the need for the test to be calibrated differently for men and women, as a lower amount of troponin is released in women during a heart attack. This is not yet rolled out in all hospitals, but they hope it will become part of standard practice, as endorsed by the Universal Definition of Myocardial Infarction.

Dr. Lee added: "By addressing a biological difference between men and women, we've successfully improved the test to detect more women who've had a heart attack. These women would otherwise be misdiagnosed."

"It's now important that this blood test, with its specific measures for men and women, is used to guide treatment and that we address these disparities in the care of men and women with heart attack. Women everywhere should benefit from improved heart attack diagnosis."

Dr. Sonya Babu-Narayan, Associate Medical Director at the British Heart Foundation and Cardiologist, said: "It's extremely promising that

bespoke blood tests for men and women could lead to better diagnosis of heart attacks. But this progress in diagnosis needs to translate in to better treatment and improved heart attack survival chances for women. We now need to dig deep into the complex reasons behind women having reduced access to investigations and treatment.

"It's essential that health care professionals are aware of the inequalities in heart care for women, and that everyone can spot the symptoms of a heart attack. With more research, and greater awareness, we can close this heart attack gender gap."

The study followed 48,282 people (47 percent women, 53 percent men) in 10 hospitals across Scotland, suspected to have a heart attack. An initial diagnosis was made using the same troponin threshold for men and women. They were then re-diagnosed using cut-off values specific for men and women—16 ng/L troponin in women and 34 ng/L in men. The subsequent treatment they received, and whether they suffered from another heart attack or death one year later, was recorded.

The BHF wants to end the perception that heart attack is a male disease, and is encouraging women to empower themselves by understanding their heart attack risk and the symptoms. To find out more about the BHF's campaign and download its new briefing, visit women" target="_blank">www.bhf.org.uk/women.

More information: Chris Wilkinson et al. Sex differences in quality indicator attainment for myocardial infarction: a nationwide cohort study, *Heart* (2018). DOI: 10.1136/heartjnl-2018-313959

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