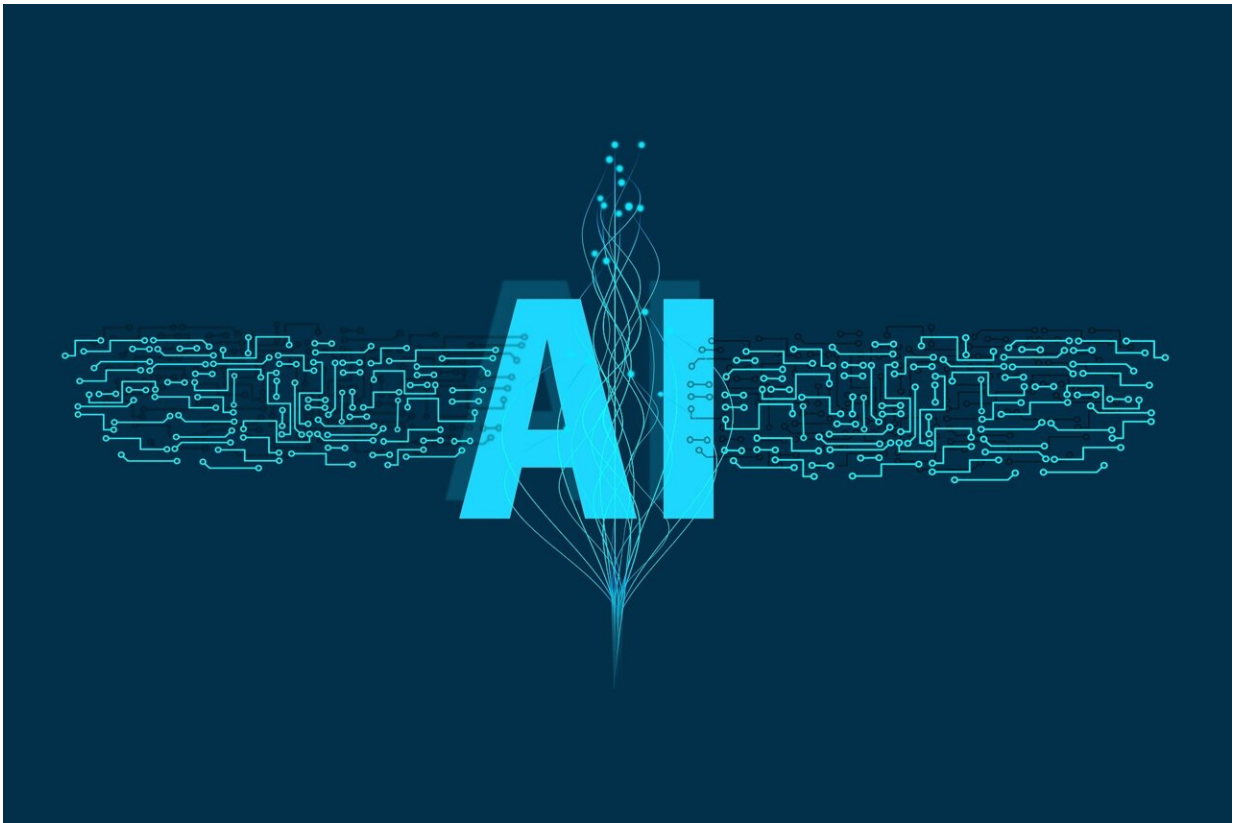


AI analysis holds potential to speed up detection of heart failure

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Credit: Pixabay/CC0 Public Domain

Using AI to interpret images from a handheld ultrasound device is comparable at detecting how well the heart pumps as the gold-standard of diagnosis currently used in the NHS. The breakthrough new findings

suggest that the use of AI could significantly speed up heart failure diagnosis waiting times.

Presented at the [European Society of Cardiology \(ESC\) Conference](#) in Amsterdam, the findings come from the ground-breaking OPERA study, a collaboration between the University of Glasgow, AstraZeneca, NHS Greater Glasgow & Clyde and NHS Golden Jubilee to assess the effectiveness of AI technology in patients with [heart failure](#).

The results show that AI interpreted heart ultrasound images, including those taken with a [handheld device](#), are as effective as using a typical ultrasound machine operated by an expert in measuring the pumping action of the heart. However, while a standard analysis of an echocardiogram with a [human operator](#) takes around 30 minutes, the AI is able to interpret the images in just one minute—a huge reduction in clinical time which has the potential to significantly speed up heart failure [diagnosis](#) waiting times.

Heart failure is serious condition where the heart is unable to pump blood around the body properly. The condition can cause a range of symptoms that can be debilitating and impact a person's day-to-day life. It is estimated that more than a million people in the U.K. are living with heart failure. In Scotland 48,000 people have been diagnosed with the condition by their GP, though experts estimate there are thousands more living with the condition unknown. Early diagnosis is vital, as starting treatment early can reduce the risk of hospitalization for people with the condition and improve their overall quality of life.

The latest OPERA results show that using AI to interpret echocardiogram images could allow early diagnosis. Faster analysis of scans could also help the NHS reduce waiting times and help to alleviate pressures on the health care system.

The OPERA study findings are the first outcome from the Memorandum of Understanding between the University of Glasgow, NHS Golden Jubilee, NHS Greater Glasgow & Clyde, AstraZeneca UK and Lenus Health. Formed in 2022, the landmark partnership of academia, health care and industry work collaboratively together to deliver NHS transformation by testing new digital technologies and patient pathways, to enable earlier diagnosis and treatment.

Dr. Ross Campbell, from the University of Glasgow, who presented the OPERA findings at the ESC Conference, said, "Our breaking new OPERA results show that investing in AI in health care could offer remarkable benefits to both patients and the NHS. We have shown that AI can interpret echocardiogram images accurately, and given AI can produce a report in a fraction of the time, this could really make a difference in allowing us to make [early diagnosis](#) of heart failure possible.

"OPERA has been made possible by the collaboration between the University of Glasgow, AstraZeneca, Lenus Health and the NHS, who have helped us demonstrate how heart failure diagnosis could be improved for patients around the world."

Dr. Ed Piper, Medical and Scientific Affairs Director, AstraZeneca UK, said, "The results of the OPERA study show how innovative technology, including AI, has the potential to streamline the diagnosis of heart failure so that patients receive the care they need at the earliest opportunity to improve their outcomes.

"AstraZeneca is proud to have collaborated with our partners in Glasgow under the Memorandum of Understanding to deliver these exciting data that will help transform future clinical practice in heart failure diagnosis."

Provided by University of Glasgow

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