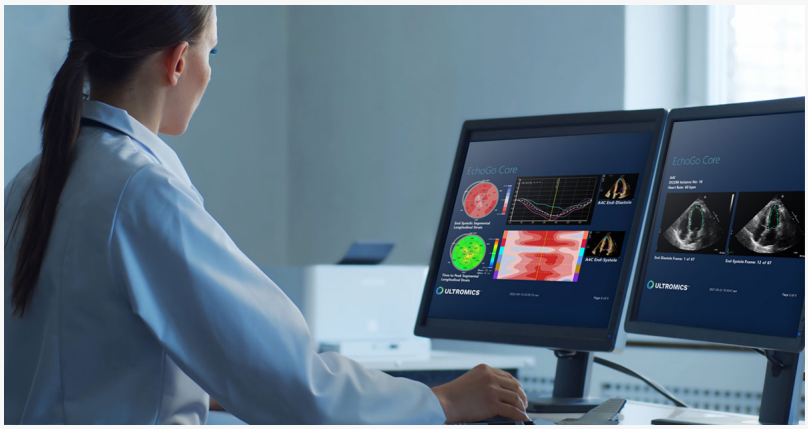
AI outperforms human analysis in predicting cardiac outcomes, research initiative by WASE finds.

Ultromics' AI technology analyzes echocardiogram images and predicts cardiac-related mortality better than human analysis.



Clinician viewing AI-derived report sent by Ultromics.

Ultromics logo

OXFORD, UNITED KINGDOM, October 10, 2022 /EINPresswire.com/ -- A new study from the World Alliance Societies of Echocardiography (WASE), a major international research initiative led by the American Society of Echocardiography (ASE), says artificial intelligence (AI) is superior to human experts when it comes to predicting cardiac-related death[1], a capability that could revolutionize cardiovascular care.

The AI platform, EchoGo by Ultromics, is FDA-cleared, CE Marked and in-use by a growing number of provider organizations across the US and UK. Ultromics is moving quickly and innovatively to help develop novel approaches to improve heart failure detection. The company recently announced a partnership with The Foundation for the National Institutes of Health (FNIH)[2] that will use their upcoming FDA breakthrough designated product to improve heart failure detection[3], looking specifically at heart failure with preserved ejection (HFpEF).

This latest research from WASE builds on previous work which showed that AI–based analysis could accurately detect outcomes from echocardiographic images[1], including combining myocardial strain biomarkers to improve predictive accuracy, recommended as clinical best practice[4]. With this, an interest in the AI's ability to make outcome predictions was compared with conventional analysis by human experts.

Dr. Federico M. Asch, lead study author and Director of the Cardiovascular and Echo Core Labs at MedStar Health Research Institute, said: "AI derived results outperformed traditional manual

analysis in the generation of Left Ventricular Ejection Fraction and Global Longitudinal Strain, as the AI proved to be a significant predictor of outcomes, which traditional reads by expert echocardiographers could not achieve."

The study looked at 870 patients admitted to 13 hospitals in 9 countries (Asia, Europe, United States, Latin America), who had acute COVID-19 and underwent transthoracic echocardiography.

The research was supported in partnership by MedStar Health, University of Chicago, and Ultromics. Dr. Federico Asch, Director of the Cardiovascular and Echo Core Labs at MedStar Health Research Institute, and Dr. Roberto Lang, Director of the University of Chicago's Non-invasive Cardiac Imaging Laboratory, served as principal investigators.

Echocardiographic left ventricular ejection fraction (LVEF) and left ventricular longitudinal strain (LVLS) were obtained manually by multiple expert readers and by the automated EchoGo AI platform from Ultromics. The ability of the manual and AI analyses to predict all-cause mortality was compared.

AI-derived LVEF and LVLS were predictors of mortality in univariable and multivariable regression analysis (odds ratio, 0.974 [95% CI, 0.956-0.991; P = .003] for LVEF; odds ratio, 1.060 [95% CI, 1.019-1.105; P = .004] for LVLS), but LVEF and LVLS obtained by manual analysis were not[1].

Direct comparison of the predictive value of AI versus manual measurements of LVEF and LVLS showed that AI was significantly better (P = .005 and P = .003, respectively)[1]. In addition, AI-derived LVEF and LVLS had more significant and stronger correlations to other objective biomarkers of acute disease than manual reads. Lastly, , inter-operator agreement for LVEF and GLS was 23% and 44% (respectively) lower for manual measurements than that achieved by the AI[1].

Dr Ross Upton, CEO and Founder of Ultromics, said “Developing precision strategies for cardiovascular disease is more critical than ever, particularly heart failure, where patient cases and costs are expected to double between now and 2030[5]. We built our AI platform to improve the accuracy of heart failure detection and prevent worsening cardiac outcomes.” Upton continued: “The technology was built using deep learning, from 10 years' worth of echocardiographic images tied to outcomes, to provide precision analysis independent of expert clinicians”.

This study demonstrates the prognostic value of AI for routine primary care and improved accuracy for prediction of cardiovascular disease. Ultromics will continue to explore how AI can contribute to the development of echocardiography and preventative care.

Click here to read the published paper in The Journal of the American Society of Echocardiography (JASE).

Dr. Asch will join Gary Woodward, pHD, Ultromics Chief Technology Officer, on a webinar on November 3rd, 2022 to discuss these ground-breaking results. Visit www.ultromics.com to register for the online seminar.

About Ultromics:
Ultromics is the leader in artificial intelligence for echocardiography enabling earlier detection and risk stratification of heart failure for better outcomes, lower costs, and improved patient care. All providers, regardless of their care setting, can now make precise, accurate, and timely diagnoses of heart failure with Ultromics' AI technology. The cloud-based platform, EchoGo, offers a simple, secure and seamless way to augment your existing technology and workflow with fully automated, advanced echo analysis including critical advanced measures recommended by guidelines.. The technology is FDA-cleared and trusted by world-renowned organizations such as Mayo Clinic and the NHS England. Learn more: https://www.ultromics.com

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