



PRESS RELEASE

AI enables Point-of-Care Echocardiography by Novices for Heart Screening

Findings presentation in the Pulmonary Vascular Disease, Valvular Heart Disease, Special Topics session on 6th March 2023 at ACC.23

Moderated Poster Theater 4_Hall F

Session Time and Date: **10:00am - 10:10am, Monday Mar 6, 2023**

NEW ORLEANS, 21 February 2023 – Novice laypersons with no prior experience underwent two-weeks training to acquire echo images among individuals with suspected heart failure using point-of-care ultrasound combined with AI based image analysis, disease detection and reporting from Us2.ai. **The study showed that AI-assisted point-of-care echo enables novices to perform accurate echo screening for heart failure in most cases.** The results will be presented in the Pulmonary Vascular Disease, Valvular Heart Disease, Special Topics session on Mar 6, 2023 at the American College of Cardiology’s Annual Scientific Session Together With World Congress of Cardiology

“This study enables cardiovascular clinicians to create new care pathways for heart failure screening, diagnosis and management,” said Huang Weiting, Consultant and Associate Professor for National Heart Centre Singapore, who has led this study along with a renowned academic group from her institute. *“With just two weeks’ training using Us2.ai decision support software on EchoNous Kosmos™ handheld ultrasound devices, novice laypersons could perform echo and produce a complete report – this could prove vital in task-shifting from cardiologists to primary care and potentially even home-based care.”*

These results were part of the PANES-HF trial, whose key findings showed, (1) two weeks of training in novice laypersons in AI-enhanced echo yielded interpretable results in 96% of patients, (2) 30% integrated discriminant improvement of AI-echo over NT-proBNP and (3) the median time required for novice echo was 11 minutes and 28 seconds per study and (4) there was good agreement between clinician and AI pathway detection of LVEF<50%, Cohen Kappa 0.742 (95% CI 0.586-0.897).

“Us2.AI’s software creates a complete and fully automated patient report¹ with editable annotations, conclusions and comparisons to the established ASE/EACVI guidelines, giving users confidence in interpretation and enables customising of reports to suit different care needs,” added Weiting.

Madhav Swaminathan, Professor & Vice-Chair for Faculty Duke Anaesthesiology for Duke University School of Medicine and Consultant for Us2.ai, added, *“This study shows that the concept of home hospitals is getting closer. Artificial intelligence-powered platforms such as Us2.AI can accelerate the uptake of heart failure screening in clinics by nurses and, in time,*

home settings. These developments in technology may decrease waiting times at hospitals thereby allowing heart failure specialists to prioritize care for more urgent cases, eased by less urgent patients being seen at clinics or self-monitored/monitored by a caregiver at home.”

Us2.AI’s automated measurements include 2-dimensional (cardiac volumes, all 4 chambers of the heart), M-mode (e.g. tricuspid annular plane systolic excursion), spectral Doppler (blood flow across all valves, both PW and CW measurements) and tissue Doppler; thus covering the vast majority of standard measurements for adult transthoracic echocardiography recommended by the ASE/EACVI. Fully automated Us2.AI measurements were shown to be completely interchangeable with expert human measurements. Furthermore, Us2.v1 measurements were completely reproducible for a given patient study, with image processing/analysis algorithm computation time of approximately two minutes per study.²

END OF RELEASE

¹ Measurements validated at the Brigham & Women’s Hospital:

Left ventricle: DecT, MV-A, MV-Adur, MV-E, e’ lateral, e’ septal, a’ lateral, a’ septal, s’ lateral, s’ septal, LVEDV MOD biplane, LVEF MOD biplane, LVESV MOD biplane, LSVV MOD biplane, IVSd, LVIDd, LVIDs, LVPWd, E/e’ mean

Left atrium: LAESV MOD biplane

Right ventricle: RVIDd

Right atrium: RAa

Tricuspid valve: Tr Vmax

² Total time for interpretation of a study can depend on other factors such as the interpreting physician and preparation for uploading DICOMs for analysis.

About Us2.ai

Us2.ai uses machine learning to automate the fight against heart disease. The company’s software tools improve clinical decision-making and cardiovascular research for clinical trials using echocardiography, the safest and most common cardiac imaging modality. Us2.ai connects institutions and imaging labs around the world on a platform of ready-to-use automation tools for view classification, segmentation and federated learning across diverse, anonymous patient and disease cohorts. Us2.ai is a fast-growing startup backed by IHH Healthcare, Heal Partners, Sequoia India and EDBI.

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