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Heart❤Beam™

HeartBeam Announces Publication of Foundational Study on the Detection of Heart Attacks

Study Comparing 3D VECG Approach to Conventional 12L ECG Appeared in JACC: Advances, a Journal of the American College of Cardiology

SANTA CLARA, Calif.--(BUSINESS WIRE)-- **HeartBeam, Inc.** (NASDAQ: BEAT), a cardiac technology company that has developed the first and only credit card-size 3D-vector electrocardiogram (VECG) platform for patient use at home, allowing for the creation of rich data for AI, today announced the publication of a foundational study demonstrating the ability of its VECG platform to detect the presence of coronary artery blockages.

The publication "Coronary Artery Occlusion Detection Using 3-Lead ECG System Suitable for Credit Card-Size Personal Device Integration"[1] appeared in JACC: Advances, a journal of the American College of Cardiology. It demonstrated that HeartBeam's VECG technology detects the presence of a coronary occlusion, the cause of heart attacks, with the same accuracy as a standard 12 lead electrocardiogram (12L ECG). The significance of this result is the potential to provide patients with an easy-to-use system to record a diagnostic quality ECG signal outside of a medical institution, which could improve heart attack detection, speed up access to care, and save lives.

Both 12L ECG and VECG signals were recorded in patients undergoing percutaneous coronary intervention. Readings were taken before and after a 90 second balloon inflation that occluded the artery, a surrogate for a heart attack. Automated computer analysis of the ST segment of the 12L ECG and VECG was performed. In addition, a panel of three cardiologists analyzed the 12L ECGs.

The study showed that the automated analysis of the VECG and 12L ECG signals had similar performance in determining whether the artery was occluded. Also in the study, the human interpretation of the 12L ECGs had significant intra- and inter-observer variability, which does not occur with automated readings.

Both the 12L ECGs and the VECG readings were analyzed in two ways: a "spot" reading, when only a single recording was considered, and a "comparative" reading when a separate "normal baseline" recording was available for comparison. The presence of the "normal baseline" recording, a novel feature that is integral to HeartBeam's VECG technology, dramatically improved the accuracy of interpretation, increasing the Area Under the Curve (AUC), a standard measure of diagnostic performance, from 0.72 to 0.95.

The study was a collaboration of Harvard Medical School Faculty at Beth Israel Deaconess Medical Center in Boston, Massachusetts and Clinical Center of Serbia in Belgrade.

"This is the first peer-reviewed publication based on our novel VECG technology," Branislav

Vajdic, Ph.D., CEO and Founder of HeartBeam**.** "It demonstrates the potential for an easy-to-use, patient-held device to be employed in the detection of heart attacks at home. By combining the novel VECG approach with a system that incorporates a patient's baseline signal, our technology was shown to have accuracy in detecting coronary occlusions similar or better to that of cardiologists evaluating a 12L ECG."

An editorial comment accompanying the article, "[Another Step Toward Early Ischemia Detection?](#)"[2] written by Jacqueline E. Joza MD, MSc, from McGill University, stated, "The authors should be congratulated on this interesting and beautifully conducted study." Dr. Joza added, "The decision to proceed to coronary angiography is made on the complete patient presentation (history and physical exam, ECG, and focused bloodwork). However, we are fast entering into a new world where the ECG may soon take precedence. One can imagine in the not-so-distant future that smart-devices will be able to automatically detect active ischemia in the field, activate a rapid-response team that includes an ambulance and a cath lab team to provide streamlined access, skipping the emergency department altogether."

[1] Shvilkin A, Vukajlović D, Bojović B, et al. Coronary Artery Occlusion Detection Using 3-Lead ECG System Suitable for Credit Card-Size Personal Device Integration. https://doi.org/10.1016/j.jacadv.2023.100454.

[2] Joza J, et al. Another Step Toward Early Ischemia Detection? https://doi.org/10.1016/j.jacadv.2023.100449

About HeartBeam, Inc.

HeartBeam, Inc. (NASDAQ: BEAT) is a cardiac technology company that has developed the first and only 3D-vector ECG platform intended for patient use at home. By applying a suite of proprietary algorithms to simplify vector electrocardiography (VECG), the HeartBeam platform enables patients and their clinicians to assess their cardiac symptoms quickly and easily, so care can be expedited, if required. HeartBeam AIMIGo™ is the first and only credit card-sized 12-lead output ECG device coupled with a smart phone app and cloud-based diagnostic software system to facilitate remote evaluation of cardiac symptoms. By collecting 3D signals of the heart's electrical activity, HeartBeam AIMIGo has the potential to provide unparalleled data for the development of AI algorithms. HeartBeam AIMIGo has not yet been cleared by the US Food and Drug Administration (FDA) for marketing in the USA or other geographies. For more information, visit HeartBeam.com.

Forward-Looking Statements

All statements in this release that are not based on historical fact are "forward-looking statements." While management has based any forward-looking statements included in this release on its current expectations, the information on which such expectations were based may change. Forward-looking statements involve inherent risks and uncertainties which could cause actual results to differ materially from those in the forward-looking statements, as a result of various factors including those risks and uncertainties described in the Risk Factors and in Management's Discussion and Analysis of Financial Condition and Results of Operations sections of our in our Forms 10-K, 10-Q and other reports filed with the SEC and available at www.sec.gov. We urge you to consider those risks and uncertainties in

evaluating our forward-looking statements. We caution readers not to place undue reliance upon any such forward-looking statements, which speak only as of the date made. Except as otherwise required by the federal securities laws, we disclaim any obligation or undertaking to publicly release any updates or revisions to any forward-looking statement contained herein (or elsewhere) to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

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