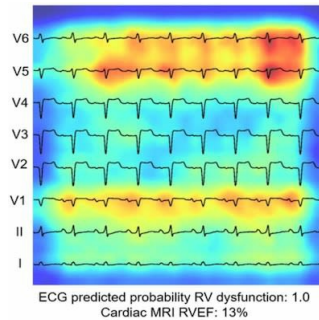


AI-Driven Model Redefines Right Heart Health Assessment



In a ground-breaking study, researchers from the Icahn School of Medicine at Mount Sinai have employed artificial intelligence (AI) to enhance the evaluation of the heart's right ventricle, responsible for pumping blood to the lungs. The study is published in the Journal of the American Heart Association.

Utilising AI-enabled electrocardiogram (AI-ECG) analysis, the study reveals that electrocardiograms can accurately predict issues with the right side of the heart. This provides a simpler alternative to complex imaging technologies and has the potential to improve patient outcomes.

The findings address the limitations of traditional methods in assessing the health of the right ventricle. Co-first author Son Q. Duong, Assistant Professor of Pediatrics (Pediatric Cardiology) at Icahn Mount Sinai, explains that this novel method can accelerate the detection of heart problems, particularly in the right ventricle and has the potential to facilitate earlier and more efficient treatment, with a special focus on benefiting patients with congenital heart disease, who frequently experience issues in the right ventricle.

The study involved training a deep-learning ECG (DL-ECG) model using harmonised data from 12-lead ECGs and cardiac magnetic resonance imaging (MRI) measurements. The research, conducted on a large sample from the UK Biobank and validated at multiple health centres within the Mount Sinai Health System, assessed the accuracy of predicting heart conditions and their impact on patient survival rates.

While acknowledging the precision afforded by AI in extracting heart information from standard tools, the researchers caution that this is an early-stage development and does not replace advanced diagnostics. They stress the need for further work to ensure the tool's safety and correct applicability, and its integration into everyday clinical practice requires careful exploration.

Study authors envision a future where AI will be pivotal in early and accurate diagnoses. Future research plans include external validation of DL-ECG models in diverse populations, ensuring broader applicability, and confirming clinical usefulness in conditions like pulmonary hypertension, congenital heart disease, and various forms of cardiomyopathy.

Source: [Mount Sinai](#)

Image Credit: Duong et al., Journal Of The American Heart Association

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