Quantitative Cardiovascular Imaging and Artificial Intelligence (AI)

Albert Hsiao MD PhD, John Axerio-Cilies PhD, Fabien Beckers PhD, Dan Golden PhD, Shreyas S. Vasanawala MD PhD

1Department of Radiology, UC San Diego, La Jolla, CA, USA; 2Arterys, Inc, San Francisco, CA, USA; 3Department of Radiology, Stanford University, Stanford, CA, USA

Introduction

- Cardiovascular diseases comprise the single most common cause of death in the developed world.
- Advances in CT and MRI can improve our diagnosis and management of patients with cardiovascular disease, but are underutilized.
- Large amount of data (gigabytes) generated by advanced CT and MRI require new software technology to maximize their benefit for patients.
- Artificial intelligence (AI) technology may help deliver advanced CT and MRI to places where there is a limited supply of trained cardiovascular imaging specialists.

The Platform

- Cloud-based platform for computational power.
- Built for Deep Learning / AI.
- HIPAA-Compliant platform by design.
- PWI System protects patient information.

Cardiovascular Flow

- Four-dimensional (4D) Flow MRI enables complete visualization of the heart and vessels in 10 minutes.
- More complete visualization and measurements of the heart and blood flow than traditional techniques.

Cardiac Morphology

- Clearer visualization of complex anatomy.

Cardiac Function

- Measurement of heart function (squeeze).
- Measurements can also be performed with 4D CT.

Artificial Intelligence (AI)

- AI can enhance efficiency of cardiac imaging to reduce costs by reducing expert manual labor.

Clinical Use Cases

- Many clinical applications for 4D flow are being actively explored, including congenital heart disease, valvular heart disease and aortic disease.

Quantitative Reporting

- Graphical reporting to improve communication.
- Quantitative capture into the electronic medical record (EMR) to enhance clinical care.

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References

