MRV | MR Flow

Reliable analysis of heart and peripheral arteries in the clinical workflow
CAAS MRV

Functional Workflow

Designed for imaging specialists, CAAS MRV is aimed to analyze performance of the heart muscle. The motion of the heart muscle can be assessed on cine MR images, allowing understanding contraction of the left and right ventricle. Additionally, damaged tissue due to lack of oxygen, is assessed using first pass perfusion or viability. Taken together, this will give a complete understanding of the patients’ cardiac function.

The endocardial and epicardial wall of the left ventricle is automatically segmented on short axis images. Ejection fraction, End diastolic and End systolic volumes are calculated accurately. Analysis of the right ventricle is also available.

CAAS MRV

Viability Workflow

Differentiate between viable and non-viable tissue using regional infarct classification based on Delayed Enhanced MR images. With the viability workflow you can also assess myocardial edema based on T2-weighted images. By combining segmental infarct and edema areas, salvageable areas in the area at risk can be identified.

An infarct detection and visualization of the white and gray zone (left) and edema (right) analysis in the viability workflow.
CAAS MRV

Tissue mapping workflow

Tissue characterization by discriminating between T1 and T2 tissue contrast is a unique strength of magnetic resonance imaging. The tissue mapping module allows the analysis of T1, T2 and T2* relaxation values. Relaxation values can be translated into a color map for easy visualization of affected tissue. Visualization of T1 relaxation values is supported for look-locker and modified look-locker sequences. For analysis of T2 relaxation values different curve fit settings are applicable.

CAAS MRV

Perfusion Workflow

Analyze rest and stress perfusion image sets side by side in the first pass perfusion workflow to determine myocardial perfusion.

---

1 In the US, Viability analysis and Perfusion analysis are for research use only and not meant for clinical decision support.
2 Tissue Mapping is pending FDA 510(k) clearance and therefore meant for research purposes only in the US.
CAAS MR Flow

Intuitive flow measurements

Blood flow in a vessel can help to understand cardiovascular problems. Inspection of the blood flow profile throughout the cardiac cycle of aortic and pulmonary flow could help to identify a shunt, valvular regurgitation or perhaps aortic co-arctation. The CAAS MR Flow workflow guides you in just a few simple steps to the results based on your phase-contrast MR images.

Key results CAAS MR Flow

> Pulmonary shunt fraction
> Cardiac output
> Regurgitation fraction
> Pumped blood volume
> Flow
> Mean velocity
> Area
> Reports can be saved as DICOM SC
> Export of numerical results in CSV Format

Key results CAAS MRV

> Ejection fraction (EF)
> End-diastole (ED) and end-systole (ES) volume
> Myocardial mass
> Wall motion, thickness and thickening
> Infarct volume and transmurality
> Edema Volume and salvageable index
> Time intensity parameters
> Rest/stress MPRi
> T1, T2 and T2* relaxation values
> Reports can be saved as DICOM SC
> Export of numerical results in XML Format
Usability is key

Save valuable time
Time is valuable in clinical practice. CAAS MRV and CAAS MR Flow are optimized to fit in the clinical practice with an intuitive and guided workflow. In CAAS MRV series of images are composed and can be inspected with the integrated DICOM viewer allowing rapid inspection and direct measurements. Are you often interrupted? No problem, as you can continue working on your analysis at any time. Your analysis and results can be stored locally or at the PACS in a clear overview.

PACS connectivity
Rapid availability of images is key for MR image analysis. The flexible setup allows connection with all major PACS systems. Our support team will help you setup your system.

Optimal workflow for intuitive analysis
The workflows in CAAS MRV and CAAS MR Flow enable you to perform an analysis in just a few steps. Each workflow, functional, viability and first pass perfusion, will guide you through the required steps. Results are presented in a clear overview dedicated for cardiology and radiology.
Pie Medical Imaging stands for:
> The gold standard in Quantitative Analysis software
> Extensive validation for both patient care and research
> Accurate and reproducible analysis results
> Fast and intuitive operation
> Expertise in cardiovascular quantitative analysis software

Quality Assurance:
Pie Medical Imaging develops, produces and sells products in accordance with international accepted standards. CAAS MRV and CAAS MR Flow are CE marked and 510(k) cleared. The use of contrast agents for cardiac MR procedures is not FDA approved and therefore the viability workflow and perfusion workflow are not 510(k) cleared and available for research use only in the US.

Quality Management System complies with:
> ISO 13485
> FDA Quality System Regulation
> Canadian CAN/CSA ISO 13485

Pie Medical Imaging BV
Philipsweg 1
6227 AJ Maastricht
P.O. Box 1132
6201 BC Maastricht
The Netherlands

tel +31 (0)43 328 13 28
fax +31 (0)43 328 13 29
mail pmi@pie.nl
web www.piemedicalimaging.com