

SCIENTIFIC SESSIONS AGENDA

11:53 AM 066 Visualization of carotid plaque calcification - a novel approach using susceptibility weighted MR imaging

Qi Yang, MD, PhD, Xuanwu Hospital

SWI phase image offers a radiation free approach to detect calcifications of the carotid artery and has the potential to separate the hemorrhage and calcification of carotid plaque within one scan.

12:05 PM 067 Assessing the hemodynamic response to exercise - a novel MR approach

Jennifer A. Steeden, MEng, UCL Department of Medical Physics & Bioengineering

A novel high temporal resolution, real-time MR flow sequence has been developed. Flow quantification has been carried out at rest and at two exercise levels, and combined with simultaneous blood pressure measurements to measure the hemodynamic response to exercise.

12:17 PM 068 Lipid modifying therapy and aortic wall thickness regression by magnetic resonance imaging (MRI): the plaque follow up study by the National Institute of Aging (NIA)

Gustavo K. Godoy, MD, Johns Hopkins University

MRI is a precise non invasive tool to measure aortic plaque regression in response to lipid lowering therapy. Two groups of treatment, one receiving simvastatin and niacin and simvastatin alone were followed by MRI over a period of 18 months.

11:00 AM - 12:30 PM

Paradise Valley Room

BSci

Oral Abstract Session XI – New CMR Methods Applied to Human Imaging

Moderators: Sebastian Kozerke, PhD, Institute for Biomedical Engineering University
Hildo J. Lamb, MD, PhD, Leiden University Medical Center

11:05 AM 069 A breath-hold R2 mapping pulse sequence detects a decrease in myocardial ferritin iron after one-week of iron chelation

Daniel Kim, PhD, New York University School of Medicine

Intracellular ferritin iron is evidently in equilibrium with the cytosolic iron pool that can change rapidly with iron chelation. This study demonstrates the feasibility of quantitatively detecting short-term changes in myocardial iron produced by iron-chelating therapy using RR2 measurement.

11:17 AM 070 Validation of the shortened modified look locker inversion recovery (Sh-MOLLI) sequence for cardiac gated T1 mapping

Stefan K. Piechnik, MScEE, PhD, University of Oxford

For T1-mapping of the human myocardium, we propose the Sh-MOLLI sequence using very short recovery epochs and conditional nonlinear fitting. Robust quantitative single-breath-hold T1 maps can be obtained in less than 10 heart beats with high spatial resolution.

Legend: Gen = General, Cgen = Congenital, BSci = Basic Science

11:29 AM 071 Highly-accelerated first-pass cardiac perfusion MRI using compressed sensing and parallel imaging

Ricardo Otazo, New York University School of Medicine

Compressed sensing and parallel imaging are combined into a single joint reconstruction technique for highly accelerated first-pass cardiac perfusion MRI. We demonstrate feasibility of whole-heart coverage per heartbeat with high spatial (<2mm) and temporal (60ms/slice) resolution.

11:41 AM 072 Clinical CMR at 3.0 Tesla using parallel RF transmission with patient-adaptive B1 shimming: initial experience

Andreas Mueller, MD, University of Bonn

A novel multi-source RF-transmission system with patient-adaptive RF-shimming at 3.0 Tesla improves image homogeneity and contrast of Black-Blood and SSFP-sequences. The B1-shimming and consecutive reduction of local SAR-peaks results in shorter allowable TR/TE values, reducing off-resonance artifacts in SSFP-sequences.

11:53 AM 073 Navigator guided high-resolution single-shot black-blood (BB) TSE images using zoom and sensitivity encoding (sense) on a 32 channel RF system

Raja Muthupillai, PhD, St. Luke's Episcopal Hospital and Texas Heart Institute

We demonstrate that by using a judicious combination of reduced FOV imaging (ZOOM), SENSE, and half-scan, it is feasible to obtain high-resolution single-shot (SSH) BB TSE images with minimal image blurring.

12:05 PM 074 Highly accelerated high spatial resolution myocardial perfusion imaging

Robert Manka, MD, German Heart Institute Berlin

Evaluation of the severity of coronary artery disease is of great importance for therapy. Highly accelerated CMR perfusion imaging offers excellent diagnostic performance in the evaluation of patients with known or suspected coronary artery disease.

12:17 PM 075 Non invasive quantification of coronary endothelial function using 3T MRI

Pierre-Julien Moro, MD, Centre de Résonance Magnétique Biologique et Médicale

Endothelial dysfunction (ED) is a key element in the development of cardiovascular diseases. We propose here a non invasive method to detect ED combining cold pressor test with measurement of myocardial blood flow at the venous coronary sinus site.

11:00 AM – 12:30 PM

Cave Creek Room

Cgen

Cases with the Experts

Panel of Experts:

Andrew Arai, MD, NHLBI-NIH -

Artifacts in Cardiac MRI

Christopher M. Kramer, MD, University of Virginia Health System - Adult Congenital Heart Disease

*At the conclusion of this presentation, the attendee should be better able to: