

QIBA DCE-MRI Technical Committee Update

Wednesday, September 16, 2009

11:00 am CDT

Call Overview

In attendance:

Michael H. Buonocore, MD, PhD (Co-Chair)
Daniel Barboriak, MD
Orest B. Boyko, MD
Andrew Buckler, MS
Geoffrey D. Clarke, PhD
Patricia E. Cole, PhD, MD
Igor Grachev, MD, PhD
Brian Hughes
Edward Jackson, PhD
Gregory Karczmar, PhD
Michael V. Knopp, MD, PhD

David E. Purdy, PhD
Mark Rosen, MD, PhD
Annette Schmidt, PhD
Thomas Yankeelov, PhD
Brenda Ye, MD

RSNA

Fiona Miller
Susan Anderson, MLS
Joe Koudelik

Phantom study and data analysis update (Drs Jackson, Karczmar and Rosen)

UCHICAGO

- Signal intensity issues encountered
- UChicago data analysis performed
 - No shift in T1 values
- Second UChicago scan received by VirtualScopics only contained rotation data
- Dr Jackson to send MDACC raw intensity data to UChicago. Average intensities that went into T1 calculations needed by UChicago
- 'Goodness-of-fit' for UChicago data looks fine, but bias present with no systematic offset seen based on compartments
- EuroPhantom can be used as test
- Drs Karczmar and Ashton to follow-up off-line on data VirtualScopics received from UChicago and questions regarding phantom rotation-fit issues, e.g. real or duplicate data not known
- Need to de-bug UChicago and MDACC data

UPENN

- Siemens data still outstanding
- Permission to access data resolved
- Possible to have Siemens data uploaded to VirtualScopics within the week, if acquisition issues don't exist due to choice of scanner/software versions used
 - Repetitive scans based on VB17 and VA scanners uploaded (to hold-off analysis)
 - Dr Jackson to follow-up with Dr Ashton concerning data received
 - Need to find proper sequence on VB15 Esprit and rescan/re-upload
- Largest central sphere within phantom is loose
 - Inter compartment notched retaining key may have come loose in transit
 - Inner sphere has rotated 20-25% out of position
 - Comparison of inner sphere to outer shell to be performed by Dr Rosen
 - Dr Ashton to be informed; inner structure shift expected to be seen during analysis
 - Integrated landmark needed within future phantom to help orientation
- Duke will be the next Siemens site to scan the phantom

ACRIN collaboration model

- One organization acting as a core lab may be exclusionary
- Does the group need additional models to review to increase participation?
 - Acquisition, collection, analysis, archival; addition core data could go through the QIBA process and be combined with “main” data
- If various organizations follow the protocol, will their results be comparable?
 - ACRIN, CROs, universities, etc.
 - All resources to perform group studies welcome
 - Suggestion that all organizations that can accrue 10 (+) patients and can follow the QIBA protocol should be allowed to participate in projects and share NIBIB funding

NIBIB proposal

- Dr Sullivan will pass along any update concerning the NIBIB proposal to all Technical Committee members

Next Steps:

- Analysis of both UChicago and UPenn data on hold for now
- Dr Jackson to send MDACC raw intensity data to UChicago. Average intensities that went into T1 calculations needed by UChicago
- Dr Jackson to forward analysis from Dr Ashton to RSNA staff to post on Wiki
- Dr Karczmar will notify group when phantom should be re-sent (if necessary) and will work with Philips engineer to address issues
- Drs Ashton, Jackson, Karczmar, Purdy and Rosen to follow-up off-line on data VirtualScopics has received
- Dr Rosen will follow-up on which VB scanner is possible
- For discussion:
 - Do we deviate from protocol? Will bad T1 measures be solved by longer TRs?
Software upgrades also important to understand
 - Additional Philips site possible at UMich, Ann Arbor