QIBA DCE-MRI Technical Committee Update Call
Friday, October 16, 2009
9:30 AM CDT
Call Summary

**In attendance:**
- Gudrun Zahlmann, PhD (Co-Chair)
- Sandeep Gupta, PhD (Co-Chair)
- Edward Ashton, PhD
- Orest Boyko, MD
- Geoffrey Clarke, PhD
- Jeffrey Evelhoch, PhD
- Mark Rosen, MD, PhD
- Annette Schmid, PhD
- John Waterton, PhD
- Gerald Wolf, PhD, MD
- Todd Dray, MD
- Fiona Miller
- Joe Koudelik

**General Discussion**

DCE-MRI Tech Ctte rotation/changes to Co-Chair Assignments
- Dr Sandeep Gupta (GE) to occupy the imaging manufacturer Co-Chair position
- Dr Zahlmann (Roche) to occupy the pharmaceutical industry Co-Chair position

UChicago Phantom Data Analysis Update
- Obtaining good T1’s and orientation measurements remain questionable
- T1 discrepancies not of primary concern because T1 measurements not needed on system calibrations in the future
- Flip angles and coil pulse performance issues may contribute excess noise
- Signal v. R1 to be used to cross-compare scanners using a single 15% flip angle
- Ratio correction of raw data does appear to help analysis results
- Corrected signals show different “swapped” sphere positions; this makes sense if phantom rotation is an issue
- Ratio correction at each rotation position needed to correct signal intensity differences
  - Need to determine why scans at various positions are not reproducible
- Relying on larger corrections may be introducing new sources of error at UChicago
  - Dr Karczmar to look over corrected image data
- Need to determine why UChicago and MDACC both produce one odd orientation and, remedy
- Correlations of signal intensity to R1 with EuroSpin phantom suggested
  - UChicago and MDACC to scan a few internal compartments in attempts to acquire similar data to rule out QIBA phantom issues
- Body coils may also be an issue
  - Examination of a body coil clone proposed to determine dependence on rotation
  - Dr Ashton to generate body coil signal information
- IRAT phantom work focused on T1’s and assimilation of uptake curves for various phantom compartments; surface coil examination not done so no comparisons available
UPenn Phantom Data Analysis Update
- UPenn data re-uploaded to FTP site
- Dr Ashton to re-download UPenn data and perform analysis by next week

MD Anderson Cancer Ctr (Dr Jackson)
- MDACC and UChicago data only analyzed to-date
- Dr Jackson to add external marker(s) to phantom to help with image orientation; rotation and inversion issues
  - Phantom #xxxxx to be returned to UChicago for additional acquisitions
- Close data correlations coefficients seen with MDACC analysis (up to 0.99 seen)
- One “rotation B” issue does remain
  - Dr Jackson to revisit this one unique MDACC acquisition outlier
  - Correction does help MDACC data slightly
- QIBA Phantom is complex; a simpler phantom would be less expensive to produce and easier to work with, possibly becoming available to all qualifying sites
  - Begin considering new design for future applications

RSNA 2009 Poster Preparation
- Decision to create two posters for RSNA 2009 finalized
  - Dr Jackson to create poster based on phantom study results to-date
  - Drs Gupta and Barboriak to create poster based on simulation data
- Report of process description and all projects experiences needed
- Need to show experiments are well worth the effort

Agenda for next DCE-MRI TC Call on 10/28 at 11 am CDT
- Once UPenn data is downloaded and analyzed by Dr Ashton, Dr Jackson will incorporate T1 and corrected T1 data into spreadsheet with MDACC and UChicago data for side-by-side comparison; correlation coefficients also needed
- Dr Jackson to revise the DCE-MRI phantom protocol to account for head first/feet first phantom orientation
- Need to pursue a clean Philips system phantom scan next