QIBA VolCT Update WebEx
Monday, May 11, 2009
11 AM (CDT)

Call Summary

In attendance:

Nicholas Petrick, PhD (moderator)
Maria Athelogou, MD
Charles Fenimore, PhD
Robert Ford, MD
David Gustafson, PhD
Wendy Hayes, DO
Michael McNitt-Gray, PhD
James Mulshine, MD
Daniel Nicholson
Kevin O'Donnell
Daniel Sullivan, MD
Binsheng Zhao, DSc

RSNA
Fiona Miller
Susan Anderson
Joe Koudelik

Review of Agenda for May 19-20, 2009 QIBA meeting, Oak Brook

- Review of schedule for breakout sessions
- Dr Sullivan reviewed the NIBIB proposal which will be discussed in more detail at QIBA meeting
    - Draft of proposal was sent to QIBA Technical Committee chairs for review and should be available for circulation prior to QIBA meeting
    - Would like recommendations and suggestions from Technical Committees on present or future projects or activities which should be included, e.g. phantom data collection/data analysis, purchasing phantoms, funding for staff time (e.g. imaging scientist, biostatistician, technologist), reproducibility studies in patients
    - Suggestions from Committee included:
        - Supporting mark-up: 1) RECIST-type mark-up and 2) reference mark-up regarding volumetrics
        - Support for travel and workshops/meetings with other stakeholders interested in QI, particularly to garner clinical input and priorities

Subgroup reports

Group 1A (Dr Petrick)

- Review of slide deck update on FDA Data Collection and QIBA VolCT Group 1A Reader Study; Dr Petrick's slides to be posted on Wiki and shared at QIBA May meeting; slides give a good flavor of the ongoing groundwork

FDA CT Phantom Study

- Slides detail the data collection for different size and shape spheres; more than 4000 scans have been completed
- Working with National Cancer Imaging Archive (https://imaging.nci.nih.gov/ncia/) to load spherical data; Dr Kinnard can assist with requests for specific data
- Accompanying files include an Excel table listing scan details/parameters and a file describing type and location of nodules

Group 1A Reader Study

- Study objective and protocol for reader study reviewed

- Measuring inter-and intra-reader bias and variability on phantom lesions for:
    - Uni-dimensional size measurement
    - Bi-dimensional size measurement
    - Clinical semi-automated 3D size measurement (volumetric assessment)
- 40 datasets; 2 repeat scans; fixed lung window & level; 6 RadPharm readers using in-house review software
- Nodule placement in phantom is not completely random but is not in an established orientation
- Randomized cases utilize three measures: RECIST, WHO and a volumetric measure
- Thanks expressed to Kristin Borradaile and Dr Kinnard for their work coordinating the project
- Pilot study performed in March 2009
    - Reader volumetric measurement on the displayed lobulated nodule was larger than the true volumes from microCT- additional analysis from the pivotal trial should help us understand if this is a real effect or just a random occurrence on a single case and by a single reader.
- Pivotal study is on schedule to finish 2nd session data approx May 22, 2009

Group 1B (Dr McNitt-Gray)

- Plan to be ready with cases for RadPharm when VolCT Group 1A phantom study is complete; will leverage the FDA and RadPharm work
- Two experiments; fewer lesions than in phantom study using two different patient datasets
    - 1. Estimating tumor volume bias and variance (LIDC datasets to be used)
    - 2. Minimum detectable level of change under 'no change' condition (MSK coffee break experiment)
        - Anticipated that LIDC data will be available from RIDER by June
        - Dr Petrick contacted Dr Clarke re possibility of getting data directly from MSK
            - Dr Clarke expects this data to be posted on the NCIA archive within the next few weeks, so QIBA should have access to this data directly through the NCIA public archive
- Thanks expressed to Drs Grace Kim, John Lu and Ms Kristin Borradaile who have provided assistance

Group 1C (Dr Fenimore)

- Inter-clinical and inter-platform comparison study with two branches:
    - 1. Follows a General (existing reference) Protocol
    - 2. Follow a Performance (specific parameter) Protocol – Sites required to meet image resolution and noise requirements to determine impact on the measurement of volume
- Concerns re. over-specifying values which would inhibit collection
- Resolution and noise may not be an issue Mr O'Donnell reviewed new table of figures which lists imaging acquisition parameters from the QIBA VolCT Lung Profile, the ACRIN 6678 and NLST protocols
    - Aim to replace placeholder values with true values
- Another effort of interest is the COPD gene study; Drs David Lynch and Philip Judy working on project with representatives from four manufacturers
    - Dr Judy will attend May 19-20 QIBA meeting
    - Dr McNitt-Gray to be included in discussions w/Dr Judy

Next steps:

- Dr Petrick will post slide set and video of 2D slices on Wiki
- Breakout group at QIBA May 19-20 meeting