QIBA CT Volumetry Technical Committee Update Call

18 June 2012 at 11 AM CDT (GMT-5)

Call Summary

In attendance:

Maria Athelogou, PhD
Andrew Buckler, MS
Paul L. Carson, PhD
Heather Chen-Mayer, PhD
David A. Clunie, MBBS
Martin Connell, BSc
Barbara Croft, MD
Sean B. Fain, PhD
Charles Fenimore, PhD
Michael Flynn, PhD
Gregory V. Goldmacher, MD, PhD
David Gustafson, PhD
Bernice Hoppel, PhD
Philip F. Judy, PhD
Hyun Grace Kim, PhD
Zachary H. Levine, PhD
John Lu, PhD
Michael McNitt-Gray, PhD
James Mulshine, MD
Kevin O'Donnell, MASc
Estanislao Oubel, PhD
Uri Shreter, PhD
Neil Steinmetz, MD, JD
Daniel C. Sullivan, MD
Ying Tang, PhD
David J. Vining, MD
Binsheng Zhao, DSc

RSNA:

Julie Lisiecki
Madeleine McCoy

- Dr. Judy presented technical groundwork of potentially common interest between oncology and the COPD/Asthma committees.

- 6/27/2012 Wednesday 2pm (CDT) Regular COPD/Asthma Tech Ctte Conference Call Agenda
  1) Status of collaboration with CBQC (Update if progress)
  2) Review of low dose reconstruction studies
     Summarize literature
     Revisit PFJ NLST results
  3) Discuss database for COPDGene Phantom images
  4) Review RFP for computer program to analyze COPDGene Phantom images

- Evaluations of COPDGene Phantom
  a) Optimization of airway size measurements
     Evaluation of dose reduction protocols
     "Challenge" to evaluate airway size algorithms
     (Look to Volumetry TC experience)
  b) RFP for public domain software to analyze COPDGene Phantom images
     Distributed draft for comment
  c) Round-robin scans of COPDGene Phantom with lung reference foams
     Put images in public database
  d) Use Phantom for qualification of CT vendor models for COPD studies
     (Toshiba experience—Hoppel and Connell)

- Normative CT lung density data needed to diagnose early emphysema--(hoping for collaboration)Collaboration with COPD Biomarker Qualification Consortium (CBQC)
  a) Two-day workshop proposed for January 2013
     - Day 1-Prioritize CT biomarker
     - Day 2-Non-CT imaging biomarkers

  b) Radiation risk is of concern to members of the Consortium; FDA to consider an amendment to guidance document to highlight CT risk concerns as a result of discussion at the January workshop
     - This would be an opportunity for development of an additional biomarker in imaging or lung volumes.

  c) Financial considerations, operational costs, and governance of the CBQC Steering Committee were discussed.
     - Though a non-profit organization, the CBQC receives support from Pharma.
     - Companies/Organizations must pay $100,000 per year to participate on the Steering Committee.
- Toshiba Evaluation with COPDgene Phantom--Data from Martin Connell-CRIC

- COPDGene phantom
  - Axial edge artifact for Toshiba Aquilion One with 380x380mm ring, other rings it is not apparent
  - 5cm Phantom not wide enough for 4cm collimation

    - Not as significant in Siemens 128 slice (Biograph mCT 128)
    - Stacking phantoms reduces artifact but difficult to align phantoms
- Dr. Levine discussed use of Teflon balls within the phantom and the creation of 5-density foam block "kits" with SI traceable measurements

- Dr. Chen-Mayer discussed NIST foam in COPDGene phantom as well as the foam block in phantom comparison
    - In-phantom HU values vs. air HU values
      Estimated attenuation/scattering effect of phantom

Next Steps for the CT Volumetry Tech Ctte:

- Next t-con scheduled for July 2nd at 11am (CT)
    - Team to discuss possible business models for QIBA (e.g., based on ATCC) in efforts to generate revenue for QIBA.
        - Dr. Mulshine to explain the ATCC business model to generate funds
        - Fee-for-Services, Fee-for-Artifacts, access to datasets to reflect curation costs, compliance testing, Profile generation…all possible sources of funding support
- Team also to discuss interest in QIBA cross-committee efforts and other directions.