

QIBA CT Volumetry Technical Committee Update Call

09 April 2012 at 11 AM CDT (GMT-6)

Call Summary

In attendance:

P. David Mozley, MD (Co-chair)
Lawrence Schwartz, MD (Co-chair)
Paul L. Carson, PhD
David A. Clunie, MBBS
Patricia Cole, PhD, MD
Barbara Croft, MD
Charles Fenimore, PhD
Marios Gavrielides, PhD

Gregory Goldmacher, MD, PhD
David Gustafson, PhD
Philip F. Judy, PhD
James Mulshine, MD
Nicholas Petrick, PhD
Philippe Raffy, PhD
Uri Shreter, PhD
Daniel Sullivan, MD

Ying Tang, PhD
David Vining, MD
Binsheng Zhao, DSc
Luduan Zhang, PhD

RSNA:

Joe Koudelik

NIBIB Contract Proposals for CT Volumetry

Dr. Mozley led the committee in a brainstorming session to identify all possible CT Volumetry projects that would benefit from future NIBIB funding from 2012 through 2014. Projects were discussed with an uncritical focus to economics, logistics, and practicality; these included:

- Predictive (outcomes) imaging biomarkers (clinical trials are a primary NIH focus)
- Pursuit of additional evidence for biomarker qualification (to support the QIBA claim that volume is a reproducible and trustworthy metric)
- Completion of original Advanced Disease Profile with supporting clinical data
- Small pulmonary nodule (neo-adjuvant trial) Profile development to continue
- Profiles for solid organ volumetry discussed (e.g., liver, spleen, kidneys)
- Expand efforts beyond the lung into liver and lymphatic metastases by development or utilization of existing hepatic and lymphatic phantoms and synthetic objects
- Non-thoracic digital reference objects considered
- Coffee break studies of non-pulmonary metastases
 - Need to simulate the biological difference between two time points when administering contrast agents
 - No-change (Coffee Break) study difficult due to low contrast differential issues; dual energy CT may be needed for this low-mass imaging
 - Coffee Break studies of hepatic feasibility utilizing MRI suggested
 - Algorithm testing with MRI Coffee Break studies suggested

QIBA Volumetric Study 3B Update (Drs. Zhao and Schwartz)

- "Clinical validation of volumetric CT as a better imaging biomarker for predicting patient survival"
- Specific Aims:
 - To explore variability in measuring total tumor volume and volume change (uni- and bi-dimensional as well)
 - To correlate responses assessed by the three techniques (uni-, bi-dimensional and volume) with patient survival
- Timeline
 - Now – April 30, 2012 ... Complete all measurements and QA
 - May 1 – June 30, 2012 ... Analyze the correlation (RECIST vs. variability-based cut-offs)
 - July – August 2012 ... Report results
- How best to study intra-reader variability was discussed
- Determining variability remains challenging due to multiple metrics utilized; need to quantify variability under biological change conditions
- Including Perfusion CT repeatability studies deemed helpful
- Trigger vs. normalized perfusion delay discussed

Reminder: QIBA Vol-CT AdvDisease v2 Public Comment Profile Feedback Working Sessions

- Thursday, April 12th at 11am – 1pm (CT)
- Monday, April 23rd at 12pm – 2pm (CT)

Next Steps:

- April 16th: spend the entire meeting discussing proposed future projects and organizing for new NIBIB application

- The group will host weekly calls until all project updates are completed (~April 16), then revert to a bi-weekly call schedule
- Next call scheduled for Monday, April 16th at 11 am CT