

QIBA Quantitative CT Committee

Monday, March 1, 2010

11 AM CST

Call Summary

In attendance

Andrew Buckler, MS (co-chair)
P. David Mozley, MD (co-chair)
Lawrence Schwartz, MD (co-chair)
Maria Athellogou, MD
Patricia E. Cole, PhD, MD
Charles Fenimore, PhD
Philip F. Judy, PhD
John Lu, PhD
Michael McNitt-Gray, PhD
James Mulshine, MD

Nicholas Petrick, PhD
Yuanxin Rong, MD, MPH
Binsheng Zhao, DSc

RSNA

Fiona Miller
Susan Anderson, MLS
Joe Koudelik

Optics Express paper (Mr Buckler)

- Paper to be published in special issue of *Optics Express*, using interactive science publishing, highlighting open-source test data in quantitative imaging
- Paper nearing completion; will be circulated to co-authors for review
- Dr Zhao will work with Mr Avila on shorter file names for ftp site

Presentation on performance of volumetric imaging analysis (Dr Mozley)

- Dr Mozley reported on a groundwork study to compare performance of volumetric image analysis with semi-automated measures; emphasis on precision of measurements to qualify Merck preferred tools
- Preparing manuscript for journal submission
- Seven independent teams of image analysts comprised of professional image analysis labs, academicians, imaging manufacturer
 - Readers received no training and little instruction
 - Six different image analysis algorithms used; 2 teams used Merck preferred algorithm
 - Each team worked slightly differently
 - Suggestion to include text explaining use of algorithms and lack of training set
- 10 cases with target lesions
- CT scans of sloped clinical trial quality, most sections approx 5mm
- Accuracy 2.7 to 12% for FDA phantoms
- Results were within expected range for global clinical trial; all results were corrected manually
- Concordance for change was higher than concordance for absolute volume or absolute value of longest diameter (LD)
- Preliminary conclusion that volume was a more responsive measure and that LD not a sensitive measure of response
- Biases seemed consistent between teams
- Considerable variation in scatter in linear measurements
- Conclusions:
 - Volumetric image analysis was:
 - more precise than SLD
 - more sensitive indicator of response
- Most discordance=difference in clinical judgment

- Discussion of use of Kaplan Meier curve (usually used for survival) to show performance of longitudinal change marker
 - Consider seeking opinion from statistician
 - Drs Cole, Schwartz, Mozley and Mr Buckler may discuss off-line
- Optimal performance is situationally dependent—may be more clear after several trials and results
- Dr Mozley will post comparative report on wiki after review is complete
- Discussion of use as Profile Claims
- Discussion of appropriate venue to present results, e.g. RSNA abstract; consider this a pilot study with small N

Next Steps

- *Optics Express* paper nearing completion; will be circulated to co-authors for review
- Dr Zhao will work with Mr Avila on shorter file names for ftp files for *Optics Express* paper
- Continued discussion of Dr Mozley's presentation on performance of volumetric imaging analysis
- Dr Reeves to provide update on VOLCAMAN '10 work
- Next call scheduled for Monday, Mar 8 at 11 am CST