

QIBA Volumetric CT Colorado Group Project Update

Tuesday, September 20, 2011 at 11 am CDT

Call Summary

In attendance

Kavita Garg, MD (Chair)
Hubert Beaumont, PhD
Andrew Buckler, MS
Paul L. Carson, PhD
Barbara Croft, MD
Alden Dima, MS
Charles Fenimore, PhD

Paul R. Garrett, MD
Philip F. Judy, PhD
Ehsan Samei, PhD
Ann Scherzinger, PhD
Neil Steinmetz, MD, JD
Ying Tang, PhD

RSNA

Joe Koudelik
Julie Lisiecki

Discussion regarding study design

- Phantom scan variability assessment study design discussed
- Semi-automatic vs. manual – inter observer variability
 - Want to follow low-dose as well as QIBA protocols

Phantom update:

- A phantom has been ordered (which will include 5 and 10 mm solid nodules. These will also be measured using similar manual and semi-automated methods as a control group)
- Waiting for quotes on nodule fabrication: spherical, and lobulated
- Plan to order eight part-solid nodules first with inner portion measuring 5 to 10 mm and density of -10 HU and +100 HU and outer density of -630 HU and diameter of 10 to 20 mm
- Have option to purchase for elliptical and spiculated nodules later

Location of synthetic nodules within phantom:

- Static nodule positioning within the phantom preferred over changing/rearranging location
- Dr. Fenimore recommended creating a fixed layout for this purpose and offered other practical suggestions for attachment of the nodules within the phantom

Imaging on different platforms

- Multi-site scanning not required – can image on 1-5 different scanners at the University of Colorado location
- Dr. Garg wants to do the simplest experiment first: using contiguous thinnest slices possible (1 mm or less) – to scan isolated (unattached), one or multiple nodule at a time, with low dose, and QIBA protocol first.

Multiple nodules and additional scans

- Resources may not exist for multiple reads, though additional data collection within a field of view (FOV) may be possible
- Mr. Buckler suggested the use of additional nodules per scan to obtain additional data, which may or may not be analyzed, but could be available for future use and would optimize raw data acquisition value

Protocols

- Mr. Buckler recommended following existing protocols directly from the public comment pages with regard to measurement of slice thicknesses, parameters, recon kernels, symbols, etc. to reinforce QIBA efforts
- Dr. Garg mentioned that the group wants to see if dose introduces variability and if so, to what extent
- Dr. Steinmetz inquired about specific measurements that will be used in this study and how to determine what will be analyzed statistically using RECIST (1 D) vs. volume (3D)

Next steps:

- Dr. Scherzinger to work on drawings for the placement of nodules prior to next call
- QIBA Vol CT Colorado Group to determine more specific main hypothesis –specific measurements for RECIST (1D) vs. volume (3D)

Next Call: VOL CT Colorado Group Update call scheduled for *Tuesday, October 18th, 2011 at 11 am CDT*