

QIBA CT Volumetry Biomarker Ctte (BC) Call

6 September 2018 at 11:00 AM CT, Thursday

Call Summary

In attendance:

Rudresh Jarecha, MBBS, DMRE, DNB (Co-Chair)

Jenifer Siegelman, MD, MPH (Co-Chair)

Andrew Buckler, MS

Richard Kinh Gian Do, MD, PhD ([MSKCC](#))

Nancy Obuchowski, PhD

Amber Simpson, PhD ([MSKCC](#))

RSNA:

Joe Koudelik

Julie Lisiecki

Moderator: Dr. Siegelman

Focus of the call: Plans to collaborate on collecting field testing data from the QIBA advanced disease Profile testing with guest speakers, Dr. Amber L. Simpson, and Dr. Richard Kinh Gian Do. A collaboration could help advance the Profile to the clinically-confirmed stage.

Guest presentation:

- Drs. Simpson and Do have a pending RO1 grant for a CT study, similar to Dr. Schwartz's original "coffee break" study
- A clinical trial has already been initiated for a liver imaging coffee break study and will utilize the QIBA Advanced Disease CT Volumetry Profile; technical specs need to be modified for the liver, e.g., slice thickness used
- Test-retest data of the liver in the portal venous phase has been acquired by Dr. Simpson, who would like to donate it to QIBA
- Approximately 40 studies may be compliant with the QIBA Profile, and there is a plan in place to collect an additional 80 or so studies to evaluate variability in tumor measurements from same-day repeat CT scans of patients with liver tumors
- Memorial Sloan Kettering (MSK) will be partnering with MD Anderson (MDA) on this study
- Both MSK and MDA have GE scanners, which will facilitate comparisons; however, no solution has been determined yet for the storage of raw data
- Goal numbers for patients are as follows for routine, early, and late portal venous phases:
 - MSK: 100 patients (approximately 6 in each group)
 - MDA: 50 patients (pending RO1 funding) – (approximately 9 in each group)
- Dr. Obuchowski requested objectives for the study so that she can provide a structured plan for the sample size
 - Drs. Simpson, Do, and Obuchowski to follow up with a t-con offline
 - Dr. Samei will work offline with Drs. Do and Simpson on the physics aspects
- Variations in the use of contrast and iterative reconstructions would be helpful to verify assumptions in the Profile

Data

- Dr. Simpson intends to de-identify datasets and make them publicly available, possibly via The Cancer Imaging Archive ([TCIA](#)) or via the Quantitative Imaging Data Warehouse ([QIDW](#)), if approved by the QIBA QIDW Oversight Committee
- Dr. Simpson works with the Medical Image Computing and Computer Assisted Intervention Society ([MICCAI](#)) and would consider posting data there in conjunction with publication of a paper
- Dr. Simpson is considering a future challenge in conjunction with Dr. Petrick to test segmentation algorithms
- Data may be useful for validation of several radiomic features
- Some data transfer agreements would need to be made with each participating institution – not with QIBA directly
- Some IRB concerns regarding the data must be addressed and other legal questions resolved
- Outcomes data will be made public after the study is published

Profile Requirements

- Sections \leq 1.25 mm are recommended for the most accurate volume calculations
- Caution voiced regarding variability in how segmentation is done; this may contribute to lesion volume errors
- Measurements would be within specifications if reconstructed image thicknesses are within 1.25 to 2.5 mm
- Reconstructions will be available for every patient, every scan; the dataset will be useful to many

- The latest [QIBA Profile for CT Tumor Volume Change for Advanced Disease \(CTV-AD\)](#) is available on the QIBA wiki
- Mr. O'Donnell will provide the checklist for the Profile, once it is available
- Conformance to all of the Profile requirements would be ideal; however, identification of gaps would be helpful also

Project Management

- It is unclear at this time where the data will reside or who will be the primary data manager
- Dr. Siegelman and Mr. Buckler to follow up with QIBA leadership regarding project management and resource questions
- Historically, the MSK would like to know how Dr. Schwartz shared the coffee break study initially before it became publicly available as RIDER data
 - This is an example of an issue that may raise legal questions
 - The QIBA QIDW Oversight Committee, may be able to address some of the questions

Action items:

- Dr. Simpson to draft objectives and follow up with IRB requirements
- Dr. Obuchowski to review objectives and draft a statistical plan
- Drs. Jarecha, Samei, and Petrick to aid with a list of names needed by Dr. Simpson for IRB sharing-of-data approval
- Mr. O'Donnell to begin drafting a template and bulleted list for future claim confirmation procedures

Next Call: TBD once some progress has been made to report to the group

Reference: Vol CT Advanced Disease [Profile Technical Confirmation Feedback](#)

For more details regarding the study protocol, please see the [July 12, 2018 call summary](#).