**QIBA CT Volumetry Biomarker Ctte (BC) Call**
12 July 2018 at 11:30 AM CT, Thursday
Call Summary

**In attendance:**

*Rudresh Jarecha, MBBS, DMRE, DNB (Co-Chair)*
*Ehsan Samei, PhD (Co-Chair)*
Richard Kinh Gian Do, MD, PhD (MSKCC)
Nancy Obuchowski, PhD
Kevin O'Donnell, MASc
Nicholas Petrick, PhD
Amber Simpson, PhD (MSKCC)

**RSNA:**
Julie Lisiecki

**Moderator:** Dr. Jarecha

**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. Imaging acquisition requirements/testing would need to meet the QIBA claims. A collaboration could help advance the Profile to the clinically-confirmed stage.

**Guest presentation:**

- Drs. Simpson and Do have an RO1 grant for a CT study, similar to Dr. Schwartz's original "coffee break" study.
- However, this study has much shorter intervals in between the repeat scans, with an estimated time of +/- 15 seconds, for what was described as a "coffee sip" study
- The goal of this study is to evaluate variability in tumor measurements from same-day repeat CT scans of patients with liver tumors
- The trial was initiated in March of 2017 and has accrued 36 patients, to date
- More patients must be accrued and there is also a need to store the raw data
- 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
- It was suggested that variations in the use of contrast and iterative reconstructions would be very helpful to expand the CT Volumetry Profile
- Dr. Samei to send a phantom to Drs. Simpson and Do to test the Profile and establish characterization of noise
- Use of these datasets might also be applicable for a segmentation challenge
- This would be an opportunity to verify certain assumptions in the Profile

- Goal numbers for patients are as follows for routine, early, and late portal venous phases:
  - MSK: 100 patients (approximately 6 in each group)
  - MDA: 60 patients (pending RO1 funding) – (approximately 9 in each group)
  - Recruit colorectal liver metastases (CRLM) resection patients to capture model variability
    - The same patient is in the scanner; each patient is imaged only once

- Acquisition and Reconstruction Parameters are as follows:
  - 6 contrast timings (-15, -10, -5, +5, +10, +15 secs. )
  - 3 noise indices (12, 14, 16)
  - 18 combinations of acquisition variables
  - ASiR: 0-60, 10% increments
  - Slice thickness: 1.25, 2.5, 3.75, 5 mm
  - Inclusion criteria for the study is 2 cm lesions
  - There are numerous and various types of lesions already included
    - The QIBA Profile starts with 10 mm lesions and above

- Dr. Obuchowski requested that the PIs come up with a list of objectives for the collaborative study so that she can provide a structured plan for the sample size
- The study is being powered for MSK, because patient protocols in place at MDA are different due to patient sizes
- Dr. Simpson intends to de-identify datasets obtained from the study and make them publicly available, possibly via The Cancer Imaging Archive (TCIA)

- Reconstructions will be available for every patient, every scan; the dataset will be useful to many
- A firm timeframe for patient accrual and study completion has not yet been established as patients are being accrued into 18 unique categories
- To aid with planning, data formats for challenges will need to be discussed further
- Were a challenge to be planned, the PIs want first rights for publishing, and expressed that this would need to be established with potential participants
- In addition, some key factors would need to be addressed for the Institutional Review Board (IRB) requirements

**Institutional Review Board (IRB) requirements:**

- A more "general" IRB approval may be possible for challenges and QIBA participants, but more specific details are needed to share data in the immediate future with study designers
- Drs. Jarecha, Samei, and Petrick to aid with a list of names and institutions needed by Dr. Simpson for more immediate IRB sharing-of-data approval
    - This should include people who will be supervising viewing of the data or who may require access to and usage of the data

**Claim confirmation:**

- Mr. O'Donnell mentioned that Canon may be interested in using the QIBA Profile to test its new Aquilion Precision scanner, which would also involve scans and re-scans on the same patient
- An "ideal" claim confirmation test needs to be designed in the next month or two in the event that this may be possible
- Mr. O'Donnell to draft a one –page bulleted list for review by the CT Volumetry co-chairs, Dr. Obuchowski, and Dr. Petrick and as a springboard for discussion
- This general list of criteria will be used to begin a template for the claim confirmed procedures
    - Specifics will need to be provided by the co-chairs

**Action items:**

- Dr. Simpson to draft objectives
- 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
- Dr. Simpson to follow up with IRB requirements
- Mr. O'Donnell to begin drafting a template and bulleted list for future claim confirmation procedures
- RSNA Staff to provide some times in late August for a doodle poll to plan for the next call

**Next Call:** late August on a Thursday, TBD by doodle poll

**Reference:** Vol CT Advanced Disease Profile Technical Confirmation Feedback