QIBA Contrast Enhanced Ultrasound (CEUS) Biomarker Committee (BC) Call

Friday, June 8, 2018; 11 AM CT

Call Summary

In attendance			**RSNA**
Mike Averkiou, PhD (Co-Chair)	Christian Greis, PhD	Shigeto Ono	Joe Koudelik
Todd Erpelding, PhD, MSE (Co-Chair)	Timothy Hall, PhD	Lihong Pan, PhD	Susan Stanfa
Cristel Baiu, MS	Kenneth Hoyt, PhD, MBA	Thierry Rognard	
Paul Carson, PhD	Nancy Obuchowski, PhD	Theresa Tuthill, PhD	

Moderator: Dr. Averkiou

2018 QIBA Annual Meeting Update (Drs. Erpelding & Carson)

- This meeting was held May 15-16 at RSNA Headquarters in Oak Brook, Illinois
- Topics included:
    - Profiles: FDG-PET Profile is the most advanced; pursuing Claim Conformance – provided experience
    - Coordinating Committee updates provided
    - Modality-based breakout sessions

- As federal support from the NIBIB contract has ended, the Sustainability Task Force has been exploring different avenues for funding, which include:
    - Grant applications
    - Modality or BC-specific alliances/collaboration with other organizations or foundations for groundwork support, e.g. ACR, QIN, EIBALL, clinical trial groups
    - QIBA performance certification based on Profiles, DROs, phantoms, etc. are potential revenue streams, but would create new hurdles such as monitoring and managing revenue
    - QIBA consulting, wherein experts within QIBA could volunteer time to sites that want to be QIBA-conformant

- Caution voiced that imaging technology changes rapidly, and QIBA must keep up by identifying Profile stopping points/stages (even at a lower performance bar) to remain relevant
- Consulting with Dr. Obuchowski upfront on approach to study design will lead to a smoother, more efficient process
- Dr. Carson to send Dr. Obuchowski's paper, "Sample size tables for receiver operating characteristics studies," to RSNA staff for distribution

Reproducibility Study Update: Time-Intensity Curves (TIC) Variability Results **(Dr. Averkiou)**

[Some of the information below was taken from Dr. Averkiou's slide presentation]

- An overview of the CEUS QIBA TIC Phantom construction was provided
- Characterized "ideal TIC" using clinical liver data
    - Liver studies of HCC, metastases, FNH, and normal parenchyma were used
    - Parameters for an "ideal TIC" were determined:
        - RT: ~15-20 seconds
        - MTT: ~30-40 seconds

- Imaging systems used:
    - Philips iU22
    - Phillips EpiQ
    - GE LOGIQ E9

- Imaging analysis software used:
    - MATLAB - LN curve fit

- Vuebox (Bracco) - Proprietary curve fit model
- QLAB (Philips)
- TIC Analysis (GE)

- Linearization & Curve Fitting
  - TIC Analysis or QLAP curve fitting (parameters) were not used at the present time
  - Vuebox has "proprietary" curve fitting algorithm
  - Vuebox gets linearized data directly from GE DICOM files; however, Vuebox experimentally determines calibration files to derive linearized data from Philips DICOM files

- Dr. Averkiou to follow up with Dr. Obuchowski regarding assessing model fit and how to analyze the data; data will be made available for committee use soon after
- Study 2: SonoVue
  - Protocol
    - CEUS QIBA TIC flow phantom setup; solution was described
    - Included three days of experiments per system with five trials per day and same diluted solution for all trials
    - Settings for the following systems and transducers were outlined
      - iU22 C5-1
      - EpiQ C5-1
      - GE LOGIQ E9 C1-6VN

    - All three systems were tested each day over the three days of experiments
    - The contrast timer was used to time trials

WebEx Calls: **June 8**: US CEUS BC **June 29**: US Coordinating Cmte **July 13**: CEUS BC **July 27**: SWS BC

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