QIBA Contrast Enhanced Ultrasound (CEUS) Biomarker Committee (BC) Call
Friday, June 8, 2018; 11 AM CT

Call Summary

In attendance

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
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<tr>
<td>Mike Averkiou, PhD</td>
<td>Co-Chair</td>
<td>RSNA</td>
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<td>Christian Greis, PhD</td>
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<td>Shigeto Ono</td>
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<td>Todd Erpelding, PhD, MSE</td>
<td>Co-Chair</td>
<td>Joe Koudelik</td>
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<td>Timothy Hall, PhD</td>
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<td>Lihong Pan, PhD</td>
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<td>Cristel Baiu, MS</td>
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<td>Thierry Rognard</td>
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<td>Paul Carson, PhD</td>
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<td>Theresa Tuthill, PhD</td>
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<td>Nancy Obuchowski, PhD</td>
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<td>Kenneth Hoyt, PhD, MBA</td>
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<td>Paul Carson, PhD</td>
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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

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

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