

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

Friday, October 12, 2018; 11 AM CT

Call Summary

Additional notes provided by Drs. Averkiou and Erpelding

In attendance

Mike Averkiou, PhD (Co-Chair)

Todd Erpelding, PhD, MSE (Co-Chair)

Cristel Baiu, MS

Paul Carson, PhD

Christian Greis, PhD

Ged Harrison, BS

Hui Jiang, PhD

Andy Milkowski, MS

Nancy Obuchowski, PhD

Stephanie Wilson, MD

RSNA

Joe Koudelik

Julie Lisiecki

Moderator: Dr. Averkiou

RSNA 2018 Poster:

- Dr. Averkiou encouraged BC members to sign up for the [Meet-the-Expert](#) poster sessions
- Updates that need to be made to the RSNA 2018 poster content include the following:
 - Background information regarding the QIBA effort and objectives for the CEUS BC regarding what the goals and expected outcomes are, such as standardization of Profiles and a reduction in the variance between systems
 - Replacement of the previous earlier data with the updated completed variability data, which we plan to publish in the future
 - A better and more detailed schematic of the phantom set-up
 - Anonymization of all equipment, software, microbubbles, and vendor names (QIBA policy)
 - Review/update of poster contributor names
- Dr. Averkiou will circulate his edited poster version amongst BC members for any feedback next week
- Reminder that the deadline to submit the poster to RSNA staff is October 31st

Future manuscript for the Reproducibility Study:

- Dr. Averkiou intends to publish the variability study findings soon in a scientific journal.
 - The design of the phantom and the collection of original data began in 2014 from the work of one of his MS students.
 - In scientific manuscripts, (in the materials and methods section), the equipment, software, and microbubbles used will have to be disclosed.
 - As mentioned above, for the RSNA QIBA poster, this information will not be revealed.
- In efforts to maintain uniformity of study results, reminder that all manuscripts based on QIBA groundwork need to be reviewed by QIBA leadership prior to submission for publication
- The goal of the present study is standardization and to determine what needs to be adjusted among systems, software, etc., in order to provide reproducible results – not a comparison of systems and analysis software packages.

Future quantification work:

- In terms of standardizing image amplitude across systems and quantification software, a proposal was made by Dr. Averkiou to develop a reference value from phantom studies, which will include the following:
 - Use of the QIBA phantom and protocol (flow rate, tubing length, and UCA dose) to form a TIC curve.
 - Definition of the maximum intensity from the TIC curve as the reference value and assignment of an arbitrary number accepted by the CEUS BC.
 - The vendors will have to do this only for the QIBA setting.
 - Currently this would be for liver scanning on a curvilinear liver problem.
 - This method would not be perfect, but the differences may be within 6-10 dB and at the same time, would avoid the issue of negative dB values that clinicians have been complaining about.
- Consider destruction-replenishment protocols and evaluate what would be necessary for standardization. Despite the fact that we are currently evaluating bolus washin-washout now, it would be a good time to also start considering destruction-replenishment.
- Address destruction-replenishment protocol standardization and possibly perform a variability study.

- A reference phantom with known ground truth is needed in order to select a suitable number for use across all platforms
 - This will be used to create a starting point for an arbitrary calibration scheme

QIBA Working Meeting and Meet-the-Experts Sessions at RSNA 2018

- All are encouraged to RSVP for the [QIBA Working Meeting](#) on Wednesday, November 28th
- All are invited to volunteer for [Meet-the-Expert](#) session times

WebEx Calls: **Oct 31:** Deadline for RSNA print-ready posters **Nov 2:** US SWS BC **Nov 9:** US CEUS BC

RSNA Staff attempt to identify and capture all committee members participating on WebEx calls. However, if multiple callers join simultaneously or call in without logging on to the WebEx, identification is not possible. Call participants are welcome to contact RSNA staff at QIBA@RSNA.org if their attendance is not reflected on the call summaries.