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

Friday, August 13, 2021; 11 AM CT

Call Summary

In attendance		**RSNA**
Mike Averkiou, PhD (Co-Chair)	Ravi Managuli, PhD, RDMS	Julie Lisiecki
Todd Erpelding, PhD (Co-Chair)	Nancy Obuchowski, PhD	
Gerard (Ged) Harrison, BS	Michelle Robbin, MD	
Connor Krolak	Stephanie Wilson, MD	
Reinhard Kubale, MD		

Moderator: Dr. Averkiou

Approval of 6.11.2021 call summary

- The last call summary was approved as presented.

Announcements

- The IEEE/IUS symposium is being planned for Sept 11th – 16th, 2021 as a virtual conference
- The 35th International Bubble Conference will be an in-person meeting in Chicago, IL, Sept 29th – Oct 1st, 2021
- The European Symposium on Ultrasound Contrast Imaging (Rotterdam) is being planned as an in-person meeting for January 2022
- The Acoustical Society of America is planning an in-person meeting in Seattle from Nov. 29- Dec. 3, 2021
- RSNA's 107th Scientific Assembly and Annual Meeting, Redefining Radiology, is being planned as an in-person meeting in Chicago from Nov. 28 to Dec. 2, 2021
- Dr. Wilson is concerned about the Bubble Conference, as borders between Canada and the U.S. remain closed, and Delta variant cases are on the rise; so, the conference is subject to change

Review of June meeting

- Dr. Averkiou provided a summary of the discussion on the June call
- Topics included clinical applications and the need for quantification analysis software, with proper data linearization
- Solutions to work around the lack of linearized data, which is essential for quantification, is now the primary topic for the BC, and all manufacturers and software developers are encouraged to participate

Discussion

- QIBA support is critical to the advancement of quantitative CEUS, which requires standardization across machines
- Current clinical focus for the BC is on the liver, with possible expansion to additional clinical applications
- Linearized data is essential to clinical researchers, and BC members are discussing potential solutions to make this available
    - Manufacturer team members have been asked to pose questions to their companies to determine if linearized data can be made available – specifically the image data obtained prior to logarithmic compression
    - Not RF data, but the data prior to logarithmic compression
- Suggested options to be discussed further included:
    - Research agreement between company and individual site
    - Agreement specific to QIBA working groups
- Manufacturer representatives on the call (Dr. Erpelding, Dr. Managuli, and Mr. Harrison) agreed to talk with their respective companies regarding these ideas
    - Bracco will also be an essential participant in this discussion
- Currently, every machine is different and the parameters and methods to extract the linearized curve differ, making comparisons difficult
- Ranking stratification issues in the process to extract linearized data was recommended
- The CEUS BC would like to convince all companies to use 'log-normal' and standardized parameters/terminology

- Steps in the quantification process include: 1) obtain time-intensity curve, 2) use log-normal curve fit, and 3) extract 4 parameters (rise time, mean transit time, peak intensity, and area under the curve)
- The process for standardizing data should be available to every researcher
- Dr. Averkiou suggested that if the full version of VueBox cannot be distributed in North America, a simplified version named "QIBA-version" for researchers would be appreciated

September 10th CEUS BC Meeting

- Dr. Wilson to present on the ***importance of perfusion quantification on the clinical application of IBD***
- Three to four representatives from companies would be ideal for discussion of time-intensity curve and linearized data

Action items – next call

- All are asked to invite friends and colleagues who can contribute to CEUS BC discussions
- RSNA staff to provide a link to the current CEUS BC roster for reference (posted to the QIBA CEUS wiki)
- Dr. Averkiou to invite specific colleagues to upcoming calls based on their expertise for planned topics
- RSNA Staff to send an earlier reminder, on the Tuesday prior to Dr. Wilson's presentation to remind the BC of upcoming topics

Action items (ongoing)

- Dr. Averkiou to invite manufacturer reps to discussions regarding linearized data and CEUS needs
- Dr. Averkiou plans to use the reformatted QIBA Profile Template, which centers around the Checklist, and has a streamlined introduction and executive summary
- Share additional literature review on bolus transit reproducibility from Drs. Erpelding, Greis, Long, and McCarville
- CEUS BC SMEs are asked to get more involved with the Profile activities
- Participation from BC members with experience with the QIBA Profile-writing process is crucial
- Dr. Chan volunteered to review 3-4 articles for clinical applicability

- **Endnote**: For reference details in Endnote and Excel formats, please email Connor Krolak at: krolakc@uw.edu

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The next scheduled calls will be as follows at 11 am CT, unless otherwise noted:

09/10	CEUS BC
10/08	CEUS BC
11/12	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.

Helpful Resources (**QIBA wiki**):

- **Profiles** | **QIBA Profile template** | **How to Write a QIBA Profile** | **Claim Guidance** | **US Shear Wave Speed Profile**
- All Profile Editors are encouraged to join the QIBA Process Committee to learn about QIBA writing tips and processes and network with other Profile Editors to exchange best practices

QIBA Process Committee:

Kevin O'Donnell, MASc (Chair): KOdonnell@MRU.MEDICAL.CANON | Michael Boss, PhD (Chair): mboss@acr.org