QIBA Dynamic Contrast-Enhanced (DCE) MRI Biomarker Committee (BC) Call

Monday, April 27, 2020 at 11 am (CT)

Call Summary

In attendance   **RSNA staff**

Caroline Chung, MD (Co-Chair)   John Carrino, MD, MPH   Cristina Lavini, PhD   Joe Koudelik

Hendrik Laue, PhD (Co-Chair)   Hyunki (Harrison) Kim, PhD, MBA   Nancy Obuchowski, PhD   Susan Stanfa

Ryan Bosca, PhD

Moderators: Drs. Chung and Laue

Profile Progress

It was noted that DCE-MRI BC members have contributed many references and edits since the April 13 call

Section 3.6. Protocol and Reconstruction Design
Image Acquisition Considerations: Signal saturation and non-linearity specification table 3.6.2

- Following a very comprehensive literature review, plenty of feedback, and the years of careful deliberation that have already occurred, the Profile is nearly ready for a vote to release for public comment
- DCE-MRI BC members were reminded that at this draft stage of Profile development, the purpose of BC calls is to prepare the document for public comment and not to revisit all of the outstanding physics details
- Discussion re: whether 1.5T and 3T parameter thresholds should be listed together or as separate tables
    o DCE-MRI BC members were asked to consider this from the perspective of those reviewing the Profile during public comment
    o Suggestion to include parenthetically, 3T specifications within the same table
    o DCE-MRI BC members were asked to review the table and note via comments in the Profile Google Doc, whether different ranges for 1.5T and 3T need to be added for any of the parameters
    o This was intended as a guide to structure conversation, rather than an instruction manual
    o Reasonable ranges need to be provided for the parameters; Drs. Chung and Laue to reach out to organ site experts (besides brain) for confirmation
- While Dr. Bosca will add phantom data to the 3.6.1 R1 Mapping sequence subsection, he may not be able to provide clarity to actual thresholds
- Suggestion to re-engage QIBA members who have been active in the DCE-MRI BC in past, but may not have attended recent calls

Section 3.10 Image Data Reconstruction
- Scaling of images and inhomogeneity corrections such as the "N3" algorithm discussed
- Example images for in-volume motion and susceptibility artefacts in MRI images were submitted
    o Images displaying movement in the aorta during volume acquisition (GE VIBE image), and signal destruction due to metallic stenting in the pancreas (Siemens FSPGR) were added courtesy of Dr. Kim

Next Steps
- Dr. Chung to complete the conformance checklist
- Review and discussion of Section 4: Assessment Procedures will commence during the May 11 call
- Work on the appendices to be continued, including condensing paragraphs and making them more concise and readable for general Profile users; Dr. Bosca offered to assist

Next call: Monday, May 11, 2020 at 11 a.m. CT