QIBA Dynamic Susceptibility Contrast (DSC-MRI) Biomarker Committee (BC) Call

Wednesday, April 8, 2020 at 11 a.m. (CT)

Call Summary

Participants			**RSNA**
Bradley Erickson, MD, PhD (Co-Chair)	Michael Boss, PhD	(Christopher) Chad Quarles, PhD	Joe Koudelik
Ona Wu, PhD (Co-Chair)	Nancy Obuchowski, PhD	Mark S. Shiroishi, MD	Susan Stanfa

Moderator: Drs. Erickson and Wu

DSC Profile Update

- The Profile was released for public comment on March 2, 2020
    - As of April 8, 13 comments have been received from three submitters through the online public comment form
    - The deadline for public comment submissions is May 15, 2020

Review of the DSC-MRI public comment resolution sheet

- The latest version of the Stage 1: Public Comment Profile was referenced
- Comment 1: Line 656 Section 3.10.1: post-Bolus Baseline: The Image Analyst shall visually identify the first point after the change in signal due to bolus passage
    - A clearer description needed for how that data point is defined; suggestion to add a figure
    - Lack of clarity will lead to variability and subjectivity in how users interpret selection of the point
    - Suggestion to limit duration to a 2-minute maximum for AUC-TN estimates

- Dr. Calamante's comments were revisited
    - Section 3.10; Line 626: "Image Data Reconstruction" heading deemed confusing
        - Discussion re: whether to change the title of this section; consensus was that it remain as is
        - Explanatory sentence to be added to note that the focus is on reconstructing parametric maps

    - Section 2; Line 146: explicit statement needed to indicate that the effect of Arterial Input Function (AIF) is not taken into consideration
        - To allow for different software packages, pending confirming performance with DRO
        - Due to lack of supporting literature and data, will avoid prescribing a software approach
        - Explanatory text to be added to discussion of Section 3.10 to note that some software may use AIF, but this is beyond scope of current claims
            - Dr. Erickson offered to add this statement to the Executive Summary

- Dr. Emblem's comments were discussed
    - Section 3.11; Line 711-715: The need for EPI spatial distortion correction
        - This is a very specific technique and special sequences would be needed, so it is likely not generalizable in the clinics
        - Distortion to be acknowledged as a source of error and other acquisition techniques than SS-EPI to improve geometry of the acquisition; this might be useful for serial studies

- Address of Dr. Jensen's comments began
    - Section 1; Lines 123-125: proposal to replace AUC-TN with nrCBV and include black box type warning, or at least make clear why AUC-TN is being used versus nrCBV
        - Discussion that rCBV is often assumed to be proportional to AUC-TN; a software component converts AUC-TN to nrCBV
        - Resolved to update the Executive Summary
    - Title: Line 5: A number of biomarkers can be derived from DSC-MRI, but only one is discussed in this profile
        - It was proposed that the biomarker be included in profile title or as a subtitle
        - Since there will be future profiles to cover other biomarkers, resolved to retain title
    - Section 2, 3.10.1: proposal to add reference(s) for K2; update K2 definition to be correct or indicate that it may have multiple ways of being calculated
        - Explanatory text that this section is focused on how to calculate AUC_TN maps, not k-space, to be added
        - Resolved to add reference to Boxerman JL, et al. **Relative cerebral blood volume maps corrected for contrast agent extravasation significantly correlate with glioma tumor grade, whereas uncorrected maps do not**. *AJNR Am J Neuroradiol*. 2006; (27) 4: 859–867.
- It was noted that the DSC-MRI BC has the discretion to accept, reject or defer comments during the review period
- Addressing comments may not require changes to Profile text, e.g., there may be a lack of literature to support a contention
- The remainder of Dr. Jensen's comments will be addressed during the May 13 DSC-MRI BC call

Next DSC-MRI BC Call: Wednesday, May 13, 2020 at 11 a.m. CT

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