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

Wednesday, November 13, 2019 at 11 a.m. (CT)

Call Summary

Participants			**RSNA**
Bradley Erickson, MD, PhD (Co-Chair)	Zhaoyang Fan, PhD	Mark Shiroishi, MD	Joe Koudelik
Ona Wu, PhD (Co-Chair)	Dariya Malyarenko, PhD	Yuxiang Zhou, PhD	Susan Stanfa
Thomas Chenevert, PhD	Nancy Obuchowski, PhD		

Moderator: Dr. Wu

DSC Profile Update

- DSC-MRI BC members were asked to make notes in the Profile, using "Suggestion Mode" (rather than making direct changes to the text)
- Discussion re: acquisition protocol in the literature upon which the Profile Claims are based vs. clinical practice methods and Claim development
    - If methodology is too strict, no one will be able to use Profile
    - Suggestion to use "acceptable" "target" and "ideal" thresholds to offer various performance levels
    - Assuming 7% CoV, or as current Claims state, expect variability to be based on Prah paper with 86% change as a real indicator of change
        - Prah MA, Stufflebeam SM, Paulson ES, et al. **Repeatability of Standardized and Normalized Relative CBV in Patients with Newly Diagnosed Glioblastoma**. *AJNR Am J Neuroradiol*. 2015; 36(9):1654–1661.
        - Disclaimer to be added that user will likely achieve better reproducibility results with future acquisitions based on improved protocols
    - Section 3.6: Protocol Design Specification Table
        - Coefficient of variation based on MRI parameters and contrast bolus technique
            - Previously, Dr. Schmainda's group outlined the need for more precision regarding the dosing schema
            - In response, the dosing instructions for scanning parameters were adjusted, tying the existing and emerging literature to Claims
        - One of the specifications in the Brain Tumor Imaging Protocol (BTIP) table (with highest CoV) was deemed too difficult to achieve in clinical practice and was removed
    - Suggestion that simulations be run using methodology outlined in the Prah article for acquisition to get a sense of what the CoV is, but Claims not to be based on simulation data
        - BNIDRO: Dr. Erickson's DSC-MRI simulation software; a web-based tool for creating DSC Digital Reference Objects
    - Dr. Wu to ask Dr. Quarles to run simulations with 90° flip angle to determine the amount of improvement in CoV and compare how reality matches the simulated results
    - References provided in the Google Doc Profile comments were incorporated
    - In preparation for the Profile (BC & CC) vote-to-release approval process, Dr. Wu requested additional internal review and feedback from DSC-MRI BC members
    - Dr. Obuchowski to review Claims and Section 4: Assessment Procedures
    - Dr. Wu to do additional work on the BTIP

- Claims need to be based on data from test-retest studies conducted on humans; alternatives can be provided, but making recommendations will be avoided
- Concern that current Claims (supported in the literature) may be based obsolete acquisition protocols, i.e., protocols are improving rapidly
- In efforts to avoid delaying the release of the Profile for public comment, Dr. Wu to edit Clinical Claim section, adding a note that Claims may be updated as new literature emerges

- Staff to follow up with Drs. Erickson and Wu re: next steps in the process toward public comment

NEW! **Visit the QIBA Citations EndNote Library! Details can be found on the QIBA Wiki Education page**

Next DSC-MRI BC Call: Wednesday, December 11, 2019 at 11 a.m. CT

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.