

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

Monday, April 13, 2020 at 11 am (CT)

Call Summary

In attendance

Caroline Chung, MD (Co-Chair) Cristina Lavini, PhD
Hendrik Laue, PhD (Co-Chair) Nancy Obuchowski, PhD
Ryan Bosca, PhD

RSNA staff

Joe Koudelik
Susan Stanfa

Moderators: Drs. Chung and Laue

Profile Progress

3.5. Periodic QA

- The NIST Phantom-lending library is referenced, but specifics are needed re: phantom availability, the software analysis package offered, target start date for this program, etc.; Dr. Laue to follow up with Dr. Russek (NIST)

3.6. Protocol and Reconstruction Design

- Dr. Bosca to review and update R1 Mapping sequence subsection
- Discussion continued re: the subsection, "Image Acquisition Considerations: Signal saturation and non-linearity"
 - Signal linearity details were added to Section 4.1.2: Testing Sequence for Signal Saturation and Intensity
 - A detailed discussion on saturation and non-linearity in DCE-MRI can be found in Appendices B and C
 - This subsection was substantially shortened and simplified
- Dr. Chung to add 1.5T brain-specific information to the 3.6.2 specification table
- Recommendation to avoid providing details for 3T since this would require a separate imaging protocol, additional phantom testing and revisions to the current Profile
- Figures in current specification table were derived from a comprehensive literature review
- There were concerns regarding the length of the Profile
 - Reminder that the purpose of the DCE-MRI Profile is to provide high-level guidance and clear instruction on how to acquire and analyze images in a standard, quantitative way
 - All nuances regarding linearity testing may be addressed in the appendices

Other Updates

- Section 3.8: Subject Handling and 3.9: Image Data Acquisition were cleaned up
- 3.10: Image Data Reconstruction - details on the B1 correction can be found in Appendix G
- 3.11 Image QA
 - Dr. Boss had previously recommended adding anonymized radiological images of common motion artefacts seen when doing DWI imaging; including examples from brain, prostate and breast, if possible
 - Dr. Laue to add within volume and between volume motion artefacts and pulsation artifacts
- References: Dr. Laue to add missing authors to one of the references and Dr. Chung to update references in EndNote
- Appendices: Clean up will continue and staff to list all DCE-MRI BC members in Appendix A: Acknowledgements and Attributions

Next call: Monday, April 27, 2020 at 11 a.m. CT

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