



AIUM/QIBA
Ultrasound Volume Blood Flow Biomarker

Summary – 05-Feb-2024

Attendees: Brian Fowlkes, Oliver Kripfgans, Tim Hall, Haylea Weiss (AIUM), Vadivel Devaraju, Michelle Robbin, Jonathan Rubin, Kunio Hashiba, Jing Gao, Stephen Pinter, Paul Carson

Summary

The team discussed the progress of their project, including the achievement of Stage 2 and the introduction of a new member, Vadivel. They also explored the potential use of a new system, Base Camp, for meeting summaries and communications. The team revisited the idea of a future round Robin at a conference for data collection and the idea of demonstrating their methodology at a conference. They also addressed open issues in the profile, specifically regarding pulse utility information.

New Year, New Team Member, Stage 2 Achievement

The meeting was the first one of the New Year, with the team welcoming everyone and acknowledging the achievement of reaching Stage 2 and the consensus profile which was posted on the wiki. J shared his screen to view the agenda and proposed a roll call for future meetings. The team also included a new member, Vadivel (actually on the BC roster), and Kunio introduced himself as the replacement for Ravi. However, Kunio mentioned he would return to Japan at the end of March and another person would likely take over his tasks thereafter.

Base Camp, Round Robin, and Methodology Demo

The team discussed the potential use of a new system, Base Camp, for meeting summaries and communications. They also revisited the idea of a future round Robin at a conference for data collection, acknowledging potential challenges but agreeing it was worth further consideration. The team also discussed the idea of demonstrating their methodology at a conference, with Paul suggesting it could be a good advertising opportunity. The team agreed to think about this idea and consider discussing it with manufacturers. The team also postponed discussing an appendix until they addressed open issues in the profile, specifically regarding pulse utility information. Finally, they confirmed their upcoming monthly meeting and the ongoing necessary meetings.

Consensus Profile Open Issues: Fluid Phantom Specifications

The team discussed the open issues in the consensus profile, with a focus on the need for additional specifications for the fluid phantom, such as scatter size or frequency-dependent backscatter coefficient. Timothy offered to provide backscatter data for typical blood mimicking fluids. The team agreed that it would be beneficial to refer to an existing standard for specifications rather than create new ones that could be difficult for manufacturers to match. An action item was assigned for Timothy to provide the backscatter data, with a potential follow-up discussion on whether modifications to the phantom specifications might be necessary.

Document Refinement and Data Analysis

The meeting primarily revolved around refining the language and clarity of certain sections in the document they were working on, particularly when it comes to pulsatile flow and the resistive index in the phantom. It was suggested that additional explanation might be required for these topics. They also discussed the possibility of revising the document to include more data from other sources, such as a carotid artery study conducted at the University of Michigan and brachial artery measurements from a study on AV fistal maturation. The need for further analysis of these data was also highlighted.

Data Processing and Clinical Feasibility

Brian initially discussed the need to review data and resolve outstanding issues to move the profile forward. He then shifted the discussion to the next stage, the clinical feasibility phase, and the criteria necessary to achieve it. A key point of contention was whether they were getting ahead of themselves by trying to establish clinical feasibility as the required volume flow measurement could not be computed directly and would require data processing offline. Timothy suggested that this was a common practice in other modalities, and Oliver added that similar processes had been used in cardiac measurements. The discussion concluded with Brian proposing to pose this issue in the first phase.

Data Collection vs. Analysis Feasibility

The team discussed the feasibility of separating data collection from analysis in the assessment process. They considered the potential need to evaluate the effectiveness of the checklist in practical scenarios. A suggestion was made to conduct a trial to assess the practicality of the process. The conversation also touched on resource considerations, particularly the need for data analysis capabilities. The idea of developing a web portal to automate checklist responses was brought up. The team agreed to explore this concept further in the next meeting.

Project Assistance, Data Collection, and Next Meeting

Timothy suggested contacting Joe and Fiona for assistance regarding an issue. Brian took a note to discuss potential issues and the next stage with his team. The topic of data collection on scanners was brought up, with Brian suggesting that practical guidance should be provided to those collecting data. It was also mentioned that a poll will be sent out to committee members to assess their participation and interest in the project. Kunio asked for the current profile to be shared, which Brian confirmed he would provide via a link to a Wiki site. The next scheduled meeting was set for March 4th.

Next Steps

1. Tim Hall to provide information or review by the group in terms of specifications for the fluid.
2. Brian Fowlkes will try to collect more measurements to verify the resistive index.
3. Brian and Oliver will discuss the analysis performed and results of Reference 24 related to pulsatile flow.
4. Brian will look into the possibility of adding an appendix or other source to explain the analysis performed.
5. Brian, Oliver, and Timothy will consider potential sources from other profiles to inform the VBF profile for next stage.
6. Brian will review the necessary steps for moving the profile to the next stage and discuss the feasibility of collecting volume flow data.
7. Brian will explore the possibility of setting up a trial to collect data for the profile.
8. Brian will look into the creation of a web page or spreadsheet that can automatically populate the results from the checklist.
9. Haylea will send Kunio's email to Brian.