

**QIBA Ultrasound Shear Wave Speed (SWS)
Clinical Applications and Biological Targets Subcommittee Call**

Monday, 13 August 2012; 1 PM CT

Dr. Cosgrove's DRAFT Call Summary

In attendance

David Cosgrove, MD, (Co-Chair)

Michael Andre, PhD

Paul L. Carson, PhD

Caterina Gallippi, PhD

Barry Goldberg, MD

Tim J. Hall, PhD

Ted Lynch, PhD

Andrew Milkowski, MS

Mark Palmeri, MD, PhD

Nicolas Rognin, MSc, PhD

Gale Sisney, MD

RSNA

Fiona Miller

Joe Koudelik

Julie Lisiecki

Moderator: David Cosgrove, MD

Goals of this subcommittee

- As well as the “gatekeeper goal” of ensuring that the work of the other subcommittees is clinically relevant, Mr. Milkowski added the goal of formulating a working list of clinical factors that could influence the SWS results in the liver, such as:
 - fasting or non-fasting status
 - left or right lobe measurements
 - depth of the measurement region
 - BMI and systemic blood pressure
- Dr. Hall stressed the importance of these biological factors in phantom design.
- Dr. Andre proposed that a list of all possibly relevant factors be drawn up, and Dr. Cosgrove offered to set this in motion.

Discussion

- Dr. Hall briefed the members on test objects and phantoms.
 - Mostly this is a matter of terminology: test objects have known characteristics, an example being slabs of muscle, while phantoms are well-controlled objects.
 - Starting out simply, QIBA SWS US TC plans to develop two types of phantoms, non-dispersive and dispersive, in sufficient numbers for distribution to various manufacturers for testing commercial equipment.
 - Dr. Hall invited the Clinical subcommittee to advise on relevant details such as the desired frequency range for the dispersive phantoms.
- Drs. Cosgrove and Andre provided an update on the current ACR status of LI-RADS:
 - work of the SWS QIBA group and the LI-RADS groups are closely complementary
 - initially directed towards developing a lexicon for focal liver lesions
 - expected to expand into other liver disease categories
 - complementary
- The EFSUMB Recommendations and Guidelines on the Clinical Use of Elastography is in the editing stage
 - a joint meeting is set up for early September that will include representatives from industry
 - It includes a range of clinical topics, including the breast and the liver (the latter chiefly on diffuse diseases).
 - The goal is for publication in the EFSUMB official journal (Ultraschall in der Medizin) early in 2013.
- Dr. Carson raised the opportunities offered by interaction with manufacturing companies.
- A discussion ensued concerning involvement of hepatologists and pathologists.
 - In Europe, hepatologists often perform their own ultrasound scans and many are authors on the EFSUMB Recommendations.
- The database on Mendeley is growing but help is needed with the essential tagging process.
 - Dr. Palmeri will be inviting members to split the workload to approximately 5 papers each.
 - Mendeley is easy to use, both for searching and for adding references.
 - Some difficulties have been experienced when attempting to add PDFs, due to copyright restrictions.
 - Dr. Carson raised the possibility of forming closed sections which would not be so restricted.
- Dr. Cosgrove presented a description of how a liver biopsy is performed and discussed the costs, risks and accuracy, which is not adequate for its use as a true gold standard.
- Numerous factors impinge on its accuracy, including:

- technical problems (core size being critical)
- patient factors (complicated pathologies)
- non-uniform diffuse disease (nodules in cirrhosis)
- interpretative differences (variability among pathologists, lack of agreement on the best scoring system)
- Dr. Andre pointed out that triple blinded scoring was the accepted standard and should be used for SWS assessments.
- Links with the AIUM, which is planning to write a set of guidelines on the clinical use of elasticity, should be formed via the SWS members who are active on the AIUM.
- Under AOB, the possibility of performing SWS measurements on biopsy specimens was raised.
 - Despite the small amounts of tissue, this might be possible and AFM could be used to assess the specimens' stiffness at a microscopic level.
 - A computational model might be developed to integrate such data and make it relevant to larger portions of tissue.
- The next meeting is scheduled for 10 Sept and will be led by Mr. Claude Cohen-Bacrie.

Next Subcommittee Calls With Moderators Indicated:

- QIBA US SWS Technical Committee - **Friday, August 24, 2012 at 11:00 AM CT** (Dr. Hall)
- Phantom Subcommittee - **Monday, August 27, 2012 at 1:00 PM CT** (Drs. Hall and Garra)
- System Dependencies Subcommittee - **Friday, August 31, 2012 at 11:00 AM CT** (Dr. Wear)
- Clinical Applications & Biological Targets Subcommittee – **Monday, September 10, 2012 at 1:00 PM CT** (Mr. Cohen-Bacrie, moderator)

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