QIBA Amyloid → Tau Profile Transition: Exploratory Meeting 2

Friday, August 12, 2022, at 9 am CT

Call Summary

Additional notes provided by Ms. Matthews

In attendance			**RSNA Staff**
Tammie Benzinger, MD, PhD [2]	Rachid Fahmi, MSc, PhD	Jean-Luc Vanderheyden, PhD	Joe Koudelik
Dawn Matthews, MS, MBA [1,2]	Timothy J. Hall, PhD	Dean F. Wong, MD, PhD	Julie Lisiecki
Charlie Chen	Satoshi Minoshima, MD, PhD	Yibao Wu, PhD	
Bradley T. Christian, PhD	Nancy Obuchowski, PhD		

[1] Amyloid Co-Chair; [2] Tau Co-Chair

***Moderator**: Dawn Matthews*

The following topics were discussed: (further information below)

- Recap of the transitional Amyloid - Tau Profile meeting held on 7/15
- Biomarker application process
- Tau profile "starter" created in the recently updated Profile template format
- A brief review of QIBA profiles
- Decisions to be made regarding the Profile:
  - Tau PET tracers to be included
  - Disease indications to be addressed
  - SUVR, DVR approaches
  - Approach to Claim development
- Next steps

Decisions / Action items:

- It was re-confirmed within the Tau Profile attendees that there is a basis to continue discussing feasibility of a PET Tau Profile
- Parallel steps during August (until the next meeting) were identified as:
  - Profile / biomarker application (submitted) will be voted upon by QIBA leadership
  - Additional investigation to be continued on availability of test-retest data
  - Tau PET "starter draft" Profile to be provided for group input
- Initial decisions were made on inclusion of Tau tracers, disease indications, SUVR/DVR approaches, and approach to claim development as described below
- Group will continue discussion on availability of test-retest data for a claim, and ability to pool data
- The Tau "Starter" Profile will be circulated

Further detail regarding the above items:

Biomarker ranking and voting procedures:

- A QIBA application questionnaire providing background regarding the relevance and feasibility of a Tau PET Profile was completed and submitted; this survey provides background for the NM Committee members who will vote on whether it should proceed; members rank each of several categories on a 5 (best) point scale

- As biomarker scoring responses received from the QIBA Nuclear Medicine Coordinating Committee (NM CC) are averaging >4 out of 5 in each criteria category, the next steps are a vote at the NM CC level following the August 19th Q3 call, followed by a vote at the Steering Committee level

Tau Starter Profile

- Content from the Amyloid Profile, in addition to new content relevant to Tau PET, has been migrated into the new QIBA Profile format that was posted on July 18, 2022. All new Profiles are asked by QIBA to be in this format. This "Starter" profile, which will be circulated, is intended to provide some efficiency so that members can focus on tau-specific content – e.g., specific claims, tau tracer contributions to variability, and any other new or revised content desired

QIBA Profiles and Claim Development:

- QIBA Profiles provide standardized methods that meet a claimed performance (accurate and reproducible).
- Questions to guide the development include "when is a change real?" "How many study subjects per arm are needed to power the study?"

Tracers to be included per availability of test-retest data:

- There was concurrence to include the following tracers:
    - [18F] flortaucipir (published)
    - [18F] MK-6240 (published)
    - [18F] PI-2620 (published)
    - [18F] RO-948 (believed to be available or can request)
    - [18F] GTP1
- Perspectives on multi-target tracers such as APN-1607 were then discussed as part of the topic regarding which disease indications to be included below

Disease indications to include in Profile:

- There was concurrence to focus this version of the Profile on use of Tau PET in Alzheimer's disease (AD)
- While there are numerous tauopathies, AD is the primary current clinical use, several tracers are specific to AD-type tau, and the most data has been established as a basis for these tracers and indication
- Of the tracers to be included:
    - PI-2620 may bind to PSP-type tau but is viewed as having a primary application of AD
    - APN-1607 or others would need to provide further information; APN-1607 not currently viewed as AD-specific based upon literature

Standard Update Ratios (SUVR) and Distribution Volume Ratios (DVR):

- Acquisition of late timeframe data and the calculation of SUVRs is most frequently used in large clinical trials and for clinical use
- Questions to the group included:
    - Should the Profile focus on SUVR as the primary measure, and include appendix information for optional use of DVR?
    - Are there data to suggest that claims using DVR would be different (tighter)? If raw data exists, is there interest in evaluating this idea?

- There was consensus that the SUVR, from a practical/usage standpoint, should be the ultimate Claim, but that DVR data should be explored to inform (a) bias or other considerations in the SUVR, and (b) characterizing the gain (e.g., potentially improved performance) when DVR is used

Test-Retest and other data

- There are 4 papers that have been identified regarding test-retest data
- It may be possible to pool data from different tracers
- ADNI has 1300+scans for flortaucipir; it may be feasible to use longitudinal data in amyloid negative cognitively unimpaired participants; the similarity of these performance measures to published test-retest performance could be explored
- Drs. Benzinger and Wong have test/retest longitudinal data for amyloid-negative populations
- Also suggested to look at test-retest data from Roche

Additional considerations

- Other considerations will include variability in NFT distribution, accumulation rate, amyloid status, age, and burden reflected in clinical stage
- Dr. Vanderheyden suggested looking into radiopharmaceutical chemistry range and binding affinity

Next Steps:

- A Dropbox will be set up for the current group members to share references and other information
- Amyloid BC members who are not interested in participating in a Tau BC are asked to notify staff at qiba@rsna.org to be removed from the list

Next Call: TBD {most likely will be Friday, Sept 9th at 9 am CT}

Parties interested in joining the QIBA LinkedIn page for QIBA updates should visit: https://www.linkedin.com/company/rsna-qiba

Reference: Ms. Matthews' slides (07.15.2022)