Global Biomarkers Standardization Consortium
AAIC 2020 Meeting
Wednesday, July 22, 2020
8:00am-11:00am CDT/3:06:00pm CEST/1:04:00PM GMT

Meeting Summary

Attendees (Names taken from webinar attendee information if a name was listed. This is not a complete list of attendees. There were ~110 attendees): Maria Carrillo, Chris Weber, Rebecca Edelmayer, Emily Meyers Heather Snyder, Keith Fargo, Suzanne Schindler, Robert Rissman, Kaj Blennow, Henrik Zetterberg, Charlotte Teunissen, Inge Verberk, Britta B

GBSC Working Group Updates

QC Program (CSF/Plasma) Kaj Blennow

The QC program started in 2009 aimed at assessing analytical and assay variability for CSF and blood in different clinical labs and to monitor assay performance. Results from the program have shown that samples can be compared between labs and from batch to batch with little to no difference. Assays tested for the core biomarkers include: INNOTEST, Euroimmune, Meso-Sclae, Elecsys and Lumipulse. For NfL, the assays tested include: Uman/IBL, UGOT, Meso-Scale and Quanterix. In total, 118 different -
tau. New NfL assays have acceptable data, but with additional data and time will become even better. In t
NfL, total tau and p-tau181). Next steps may be to move forward with next publication for the QC program.

Round Robin Studies (CSF/Plasma) Henrik Zetterberg

A esults discussed at AAIC 2019 is in progress and will be circulated to 2Ç– gmmir4

sample tubes (note: other tube types lead to different biomarker results thus might result in different pre-analytical recommendations). Data on the delay in processing between sampling and centrifugation indicate that <3hrs RT or >3hrs 2-8°C is -8°C and

reach a plateau when compared relative to Braak staging of postmortem tissue. Will p-tau217 be a good marker for early diagnosis?

A ratio of p-tau217/p-tau181 has seen value in CSF, but not in plasma.

A total tau assay has not yet been developed that replicates what is seen in CSF. Data may be available soon that addresses total tau epitopes by taking advantage of work with mass spectrometry.

Some interesting papers to address what p-tau is a marker of: track TBI group showed p-tau increases dramatically after TBI and goes down after 2-3 days. This could be opening of BBB to release these markers and then recovery. Could a low-grade BBB impairment influence p-tau levels in AD?

Combining p-tau antibodies in assays has been attempted, but sensitivity was not high enough. Perhaps with new technologies there will be more opportunities.

What do we need to do for clinical practice/clinical trials? Plasma work has moved faster and with additional studies on the pre-analytical phase and some basic standardization work, this can be used for clinical trials. Clinical practice will need to wait.

Global updates from outside the GBSC

University of Gothenberg and Washington University in St. Louis).

The Plasma project as launched, however Study 1 was delayed to September 2020 due to COVID-19.

Feasibility assessment is ongoing for the potential tau buy-up option to review plasma p-tau assays that are currently available (p-tau181, p-tau217, and 231).

MarkVCID – Research Updates Steven Greenberg

The goal of MarkVCID is to identify and validate biomarkers for small vessel disease-related VCID to the point of being ready for application to clinical trials. Instrumental validity and biological validity are the desired properties of a biomarker. Sites that participated in MarkVCID proposed 11 candidate biomarkers including MRI and fluid markers and the validation process is ongoing. Fluid biomarkers include plasma endothelial growth factors, exosome endothelial Inflammatory factors, Plasma NfL, CSF placental growth factor

Instrumental validation for fluid-based kits and imaging-based kits to measure validity of the assay and site specific validity. Participant enrollment, clinic visits and some analysis have been paused due to COVID-19 and are resuming slowly.

Discussion: The Future Use of CSF and Amyloid PET in Routine Clinical Practice

Panel: Gill Farrar, Jonathan Schott, Leslie Shaw, and José Luis Molinuevo

Moderator: Maria Carrillo

Discussion Overview

Dr. Les Shaw provided an overview of CSF biomarkers and their relationship to amyloid PET and how to potentially use these biomarkers in clinical practice. In the setting of clinical practice, the use of advanced diagnostic procedures (CSF biomarkers and amyloid PET) is considered if a question on

ints higher. The ATN framework provides a useful approach that can utilize CSF biomarkers to define presence/absence of amyloid, tau and neurodegeneration pathology. Using participant samples from ADNI with a diagnosis of MCI, the rate of progression to d

criteria. This is further defined when the genetic history is included. The ATN criteria permits a combination of biofluid and imaging (eg, MRI-based hippocampal volume) and genetic biomarkers and likely plasma biomarkers will become very important.