Protocol Design, Compliance, and Feasibility of Frequent Remote Monitoring in Patients Receiving Lecanemab

Alexa Goldstein, BA[1], Erin Krahn, BA[2], Neguine Rezaii, MD[3], Mark Eldaief, MD[2], Scott McGinnis, MD[3,4], Raseeka O'Chander, MA[1], Bonnie Wong, PhD[3,5]*, Brad Dickerson, MD[3]*

[1]Frontotemporal Disorders Unit, Massachusetts General Hospital, Boston, MA, USA, [2]Frontotemporal Disorders Unit, Department of Neurology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA, [3]Frontotemporal Disorders Unit and Massachusetts Alzheimer's Disease Research Center, Department of Neurology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA, [4]Brigham and Women's Hospital, Boston, MA, USA, [5]Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA

*Co-senior authors

Poster code **101e6731**

MASSACHUSETTS GENERAL HOSPITAL
FRONTOTEMPORAL DISORDERS UNIT

BACKGROUND & OBJECTIVE

Background:

- Anti-amyloid disease-modifying therapies (DMTs) such as lecanemab are increasingly being prescribed for Alzheimer's Disease (AD), marking a shift toward therapeutic intervention earlier in the disease course.
- As these therapies become more common, there is a growing need to monitor their impact on cognition and daily functioning in real-world settings.
- Current monitoring paradigms rely on cognitive testing every 3 months[1] and may miss important short-term fluctuations or emerging treatment-related effects. More frequent and in-depth cognitive assessments could enable richer, more granular tracking of clinical outcomes and better inform treatment decisions.
- Advances in telehealth and virtual assessments have demonstrated feasibility and acceptability in older adults with cognitive impairment[2], suggesting that remote, high-frequency monitoring may be a viable approach in this population.

Objective: Describe a novel approach to regular and frequent cognitive testing for AD patients receiving DMTs.

METHODS

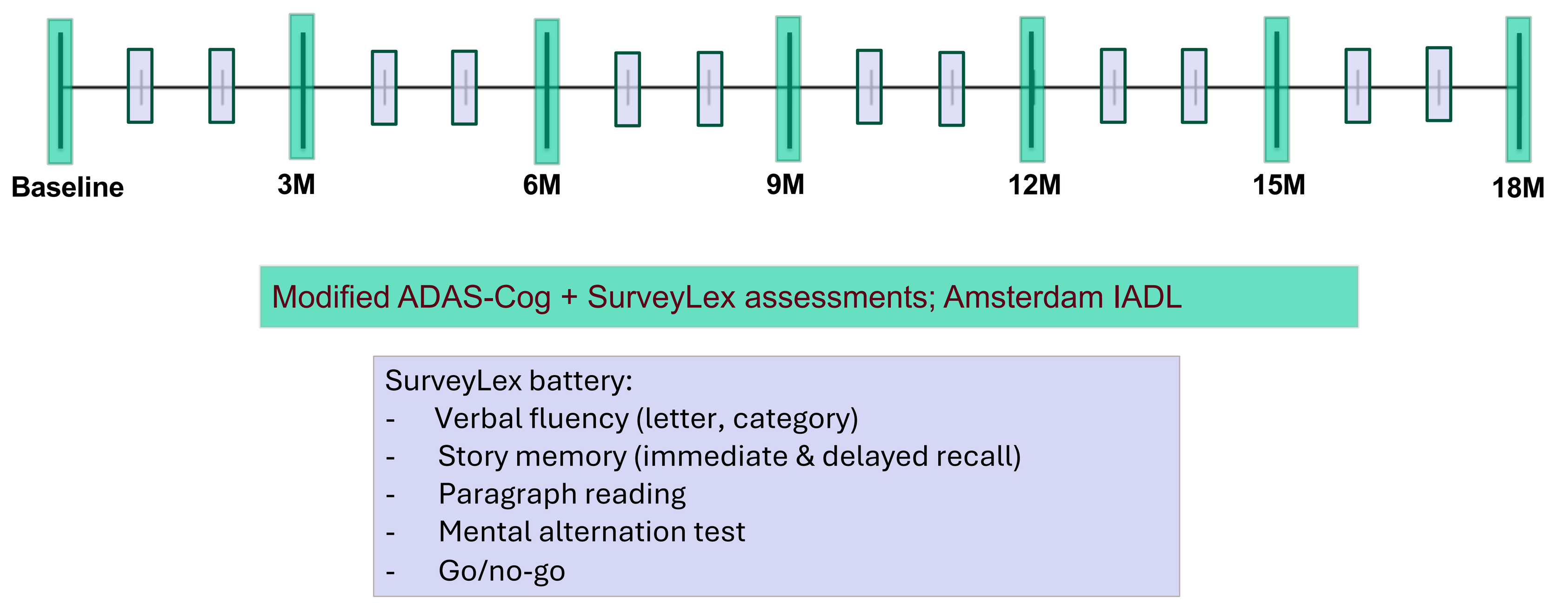
Participants:

- 18 patients with typical and atypical AD syndromes receiving lecanemab were enrolled in a prospective observational study (Table 1). Study enrollment is ongoing.

Procedures:

- All study visits were conducted remotely by secure videoconference.
- Voice responses were collected using SurveyLex, a novel web-based platform designed to efficiently capture and analyze voice data.
- Baseline assessment occurred within 1 week before a lecanemab infusion.
- Participants completed a Modified AD Assessment Scale-Cognitive (ADAS-Cog) and SurveyLex assessments at baseline and every month or three months thereafter, according to the following schedule:

Figure 1. *Testing frequency*



- In addition, at baseline and every 3 months, study partners completed the Amsterdam Instrumental Activities of Daily Living Questionnaire (Amsterdam IADL) via REDCap, capturing information on functioning and behavior.
- Composite SurveyLex scores were calculated by summing the scores from each subtest.

RESULTS

Table 1. *Participant characteristics*

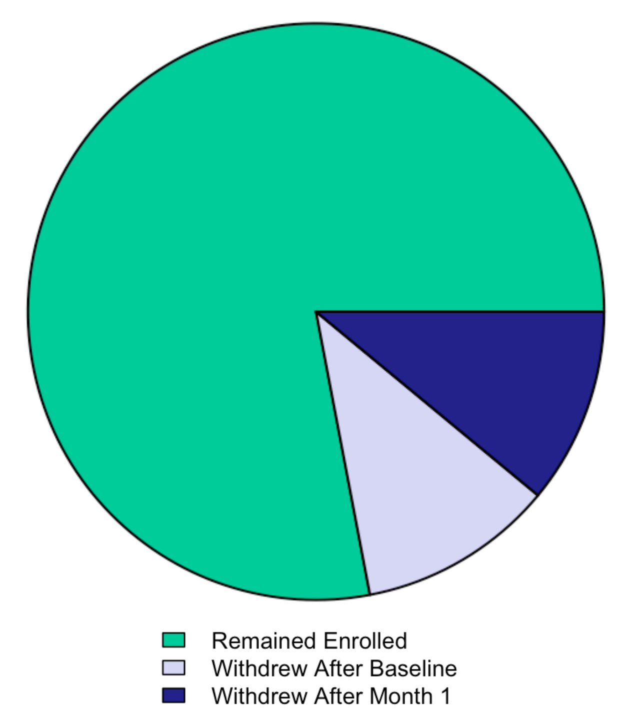
	Typical AD (N=11)	PCA (N=4)	PPA (N=3)
Mean age, years (SD)	70.09 (9.16)	62.75 (6.24)	61.67 (13.61)
Sex (F/M)	4/7	4/0	3/0
Mean education, years (SD)	18.91 (2.77)	16.50 (1.00)	18.00 (2.00)
Race, white - N (%)	10 (91)	4 (100)	3 (100)
CDR Global†	CDR=0.5 (N=6) CDR=1 (N=2)	CDR=0.5 (N=2) CDR=1 (N=2)	CDR=0.5 (N=1) CDR=1 (N=2)
Mean MoCA (SD)	21.00 (4.69)	16.75 (3.40)	14.00 (3.60)
Mean ADAS-Cog (SD)	22.54 (9.30)	30.08 (6.73)	47.56 (23.48)
Mean informant Amsterdam IADL (SD) ‡	35.67 (33.76)	53.10 (24.50)	34.93 (29.96)

PCA=Posterior Cortical Atrophy. PPA=Primary Progressive Aphasia. MoCA maximum possible score is 30. ADAS-Cog maximum possible score is 80; higher score indicates greater impairment. The Amsterdam IADL score ranged from 0-100; higher score indicates less independence in daily activities.

†3 AD participants did not receive a CDR score prior to starting infusions.

‡1 AD participant's informant and 1 PCA participant's informant did not complete the Amsterdam IADL.

Figure 2. *Participant enrollment and withdrawal.*



Note. 4 participants (22%) withdrew from study procedures due to emotional burden and time commitment.

Figure 3. *Percentage of study visits completed by month.*

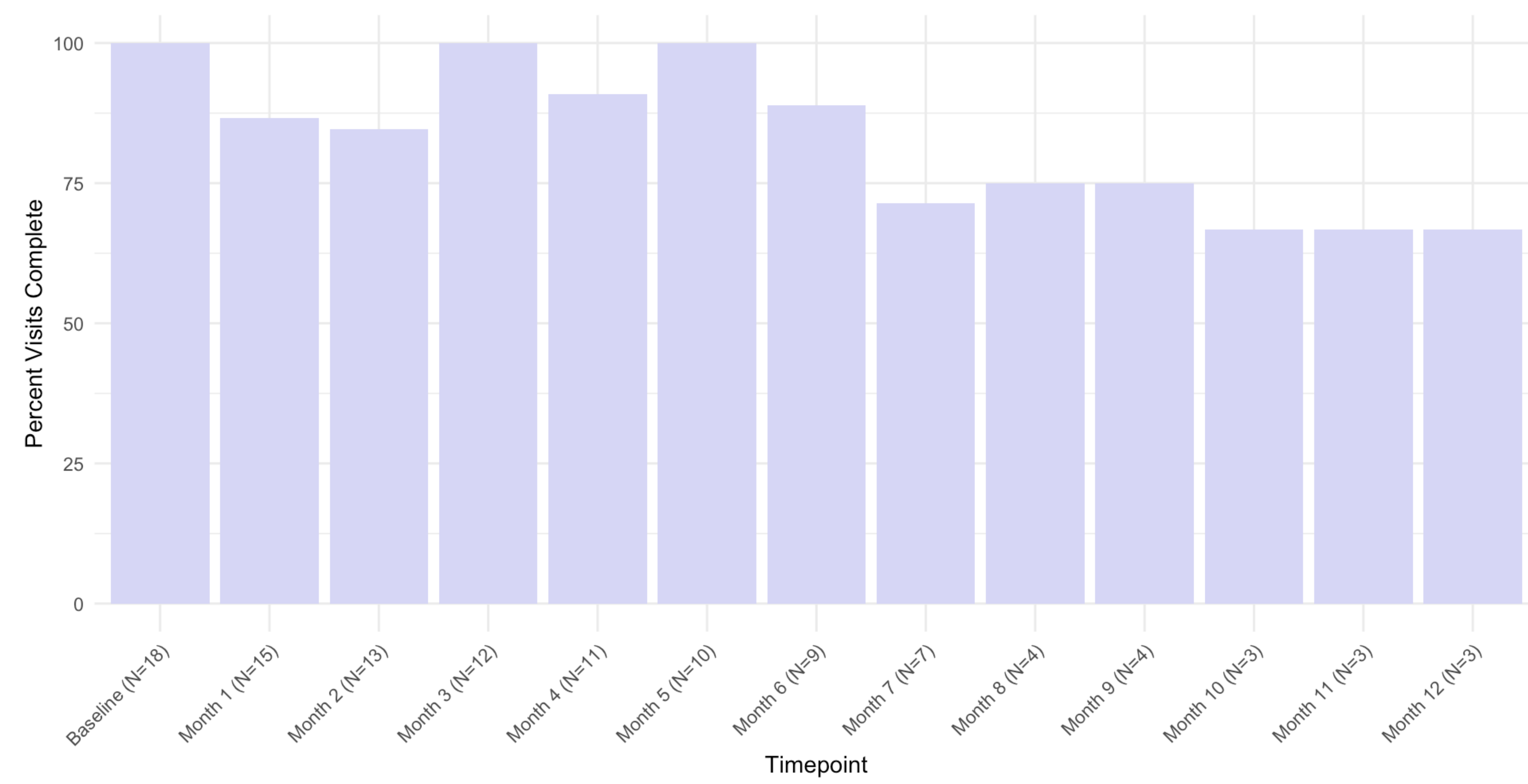
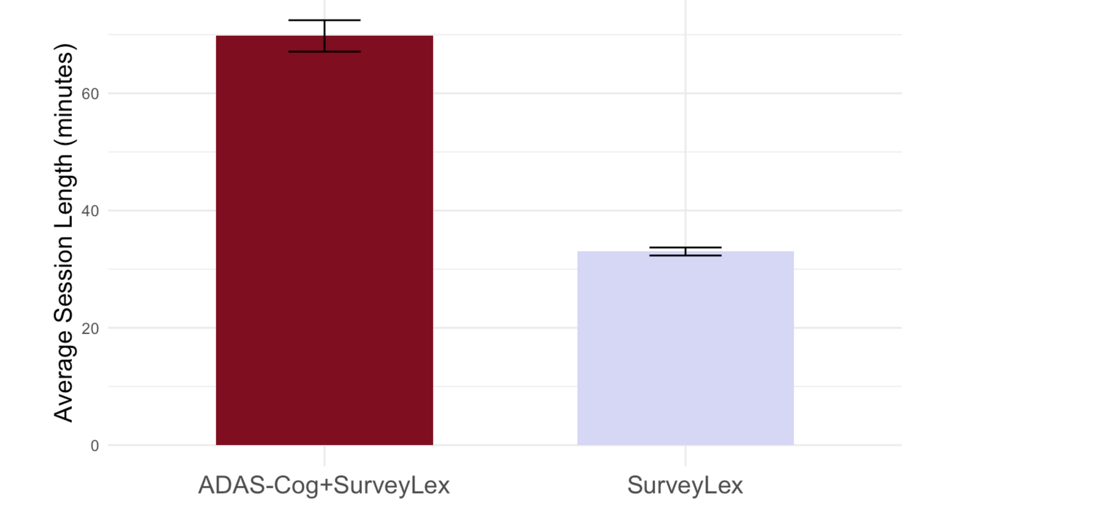
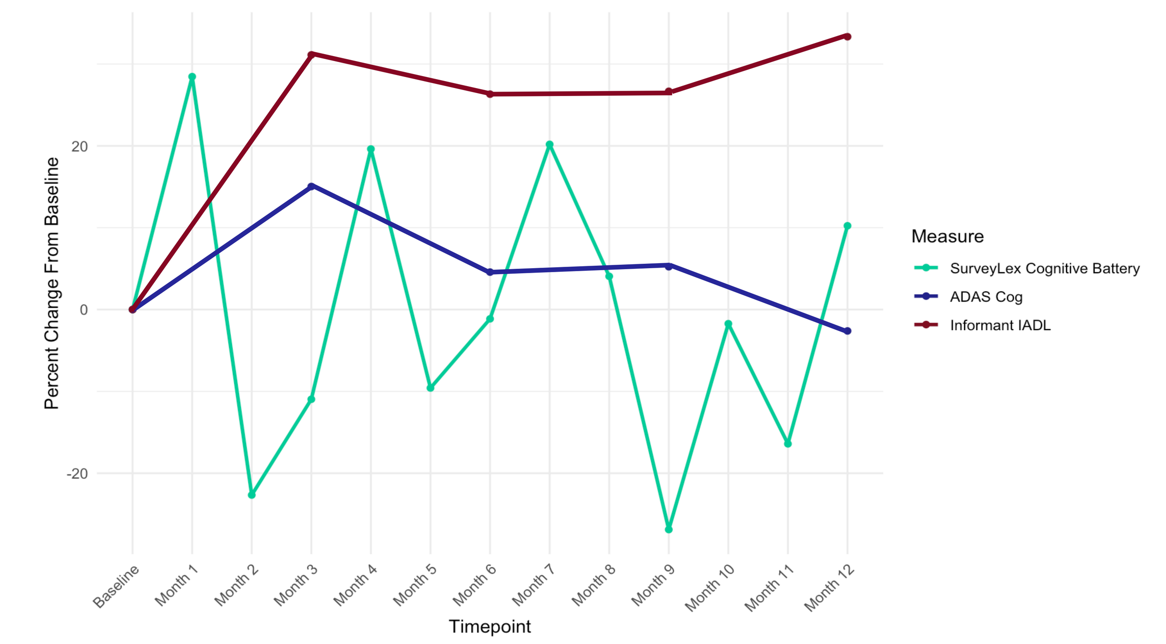


Figure 4. *Average study visit session length.*



Note. Error bars represent one standard error of the mean.

Figure 5. *One-year cognitive and IADL profile (percent change from baseline) (N=1).*



Note. Scores adjusted so that higher scores indicate less impairment.

CONCLUSIONS

- Enrollment is ongoing. Remote cognitive testing of AD patients receiving lecanemab appears feasible with 78% of participants remaining enrolled 2 months after baseline.
- Frequent cognitive assessments may detect changes that could be missed with less frequent testing and can provide insights into short-term or transient effects that occur during treatment.
- Additional analyses are ongoing to identify patient characteristics associated with high likelihood of compliance with regular telehealth monitoring.
- We propose remote monthly assessments as a new model to monitor patients receiving DMTs for AD.

REFERENCES

1. van Dyck CH, Swanson CJ, Aisen P, Bateman RJ, Chen C, Gee M, Kanekiyo M, Li D, Reyderman L, Cohen S, Froelich L, Katayama S, Sabbagh M, Vellas B, Watson D, Dhadda S, Irizarry M, Kramer LD, Iwatsubo T. Lecanemab in Early Alzheimer's Disease. N Engl J Med. 2023 Jan 5;388(1):9-21. doi: 10.1056/NEJMoa2212948. Epub 2022 Nov 29. PMID: 36449413.
2. Parsons MW, Gardner MM, Sherman JC, et al. Feasibility and Acceptance of Direct-to-Home Tele-neuropsychology Services during the COVID-19 Pandemic. *Journal of the International Neuropsychological Society*. 2022;28(2):210-215. doi:10.1017/S1355617721000436

Corresponding author: angoldstein@mgh.harvard.edu
Supported by philanthropic funding to the MGH FTD Unit