p=0.017), but this was not observed with any other regions.
Conclusions: The current results show that antemortem plasma GFAP is associated with non-specific AD neuropathological changes at autopsy. Plasma GFAP could be a useful and practical biomarker for assisting in the detection of AD-related changes, as well as for study of disease mechanisms.

Categories: Dementia (Alzheimer's Disease)
Keyword 1: dementia - Alzheimer's disease
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6 Examining Interactions Between Longitudinal, Intraindividual Fluctuations in Cognition and Alzheimer's Disease Biomarkers to Predict Eventual Disease Progression

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Objective: The purpose of the present study was to study the clinical significance of fluctuations in cognitive impairment status in longitudinal studies of normal aging and dementia. Several prior studies have shown fluctuations in cognition in longitudinal studies is associated with greater risk of conversion to dementia. The present study defines "reverters" as participants who revert between cognitive normality and abnormality according to the Clinical Dementia Rating (CDR™). A defining feature of the CDR at the Knight Alzheimer's Disease Research Center (Knight ADRC) at Washington University in St. Louis is that the CDR is calculated by clinicians blinded to cognitive data and any prior assessments so that conclusions are drawn free of circularity and examiner bias. We hypothesized reverters, when compared to cognitively normal participants who remain unimpaired, would have worse cognition, abnormal biomarkers, and would eventually progress to a stable diagnosis of cognitive impairment.
Participants and Methods: From ongoing studies of aging and dementia at the Knight ADRC, we selected cognitively normal participants with at least three follow-up visits. Participants fell into three categories: stable cognitively normal ("stable CN"), converters to stable dementia ("converters"), and reverters. Cognitive scores at each visit were z-scored for comparison between groups. A subset of participants had fluid biomarker data available including cerebrospinal fluid (CSF) amyloid and phosphorylated-tau species, and plasma neurofilament light chain (NfL). Mixed effect models evaluated group relationships between biomarker status, *APOE* ε4 status, and CDR progression.
Results: 930 participants were included in the study with an average of 5 years of follow-up (Table 1). 661 participants remained cognitively normal throughout their participation while 142 progressed to stable dementia and 127 participants had at least one instance of reversion. Compared to stable CN, reverters had more abnormal biomarkers at baseline, were more likely to carry an *APOE* ε4 allele, and had better cognitive performance at baseline (Table 2, Figure 1). Compared to converters, reverters had less abnormal biomarkers at baseline, were less likely to carry an *APOE* ε4 allele, and had overall better cognitive performance at baseline. In longitudinal analyses, cognitive trajectories of reverters exhibited a larger magnitude of decline compared to stable CNs but the magnitude of decline was not as steep as converters.
Conclusions: Our results confirm prior studies that showed reversion in cognitive status, when compared to stable cognitive normality, is associated with worse overall genetic, biomarker and cognitive outcomes. Longitudinal analyses demonstrated reverters show significantly more decline than stable participants and a higher likelihood of eventual conversion to a stable dementia diagnosis. Reverters' cognitive trajectories appear to occupy a transitional phase in disease progression between that of cognitive stability and more rapid and consistent progression to stable dementia. Identifying participants in the preclinical phase of AD who are most likely to convert to symptomatic AD is critical for secondary prevention clinical trials. Our results suggest that examining intraindividual variability in cognitive impairment using unbiased, longitudinal CDR scores may be

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a good indicator of preclinical AD and predict eventual conversion to symptomatic AD.

Categories: Dementia (Alzheimer's Disease)
Keyword 1: neuropsychological assessment
Keyword 2: dementia - Alzheimer's disease
Keyword 3: assessment
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Paper Session 09: Parkinson's disease and Multiple Sclerosis topics

4:00 - 5:25pm
Thursday, 2nd February, 2023
Town & Country Ballroom D

Moderated by: Cady Block

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1 Cognitive Rehabilitation and Mindfulness Reduce Cognitive Complaints in Multiple Sclerosis (REMIND-MS): a Randomized Controlled Trial

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Objective: Cognitive problems, both complaints and objective impairments, are frequent and disabling in patients with multiple sclerosis (MS) and profoundly affect daily living. However, intervention studies that focus on cognitive problems that patients experience in their daily lives are limited. This study therefore aimed to investigate the effectiveness of cognitive rehabilitation therapy (CRT) and mindfulness-based cognitive therapy (MBCT) on patient-reported cognitive complaints in MS.

Participants and Methods: In this randomized-controlled trial, MS patients with cognitive complaints completed questionnaires and underwent neuropsychological assessments at baseline, post-treatment and 6-month follow-up. Patient-reported cognitive complaints were primarily investigated. Secondary outcomes included personalized cognitive goals and objective cognitive function. CRT and MBCT were compared to enhanced treatment as usual (ETAU) using linear mixed models.
Results: Patients were randomized into CRT (n=37), MBCT (n=36) or ETAU (n=37), of whom 100 completed the study. Both CRT and MBCT positively affected patient-reported cognitive complaints compared to ETAU at post-treatment ($p<.05$), but not 6 months later. At 6-month follow-up, CRT had a positive effect on personalized cognitive goals ($p=.028$) and MBCT on processing speed ($p=.027$). Patients with less cognitive complaints at baseline benefited more from CRT on the Cognitive Failures Questionnaire (i.e. primary outcome measuring cognitive complaints) at post-treatment ($p=.012$-$.040$), and those with better processing speed at baseline benefited more from MBCT ($p=.016$).
Conclusions: Both CRT and MBCT alleviated cognitive complaints in MS patients immediately after treatment completion, but these benefits did not persist. In the long term, CRT showed benefits on personalized cognitive goals and MBCT on processing speed. These results thereby provide insight in the specific contributions of available cognitive treatments for MS patients.

Categories: Multiple Sclerosis/ALS/Demyelinating Disorders
Keyword 1: cognitive rehabilitation
Keyword 2: treatment outcome
Keyword 3: executive functions
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2 Neuropsychological Rehabilitation of Multiple Sclerosis Patients: Long-Term Effects on Everyday Functioning

Inês Ferreira, Ana Martins daSilva, Ernestina Santos, Raquel Samões, Ana P Sousa, Sara Cavaco

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