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CLINICAL MANIFESTATIONS

POSTER PRESENTATION

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NEUROPSYCHIATRY AND BEHAVIORAL NEUROLOGY

Predictors of Cognitive Decline in Individuals with Subjective Cognitive Decline of the DELCODE Study Cohort

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Abstract

Background: Subjective cognitive decline (SCD) refers to a self-perceived, persistent cognitive decline compared to previous levels in individuals with objectively unimpaired cognition. Studies have repeatedly shown associations of SCD characteristics with amyloid pathology and increased risk of future cognitive decline, especially in memory-clinic settings. The aim of this project is to model individual differences of cognitive decline in individuals with SCD.

Method: Latent Growth Curve Model (LGCM) analysis was applied to individuals with SCD from the DZNE Longitudinal Cognitive Impairment and Dementia (DELCODE) study. We chose a sample of n = 203 participants who showed a decline on the Preclinical Alzheimer's Cognitive Composite (PACC5) score over five years. First, a two-factor linear growth model was fitted on the annualized PACC5 data. We then calculated and compared two models to which we added the following baseline predictors: 1) plasma Aß42/40, plasma ptau181, ApoE-4-carrier status and hippocampal volume (biological model), and 2) Geriatric Depression Scale (GDS), Geriatric Anxiety Inventory–Short Form (GAIS-SF) and Neuropsychiatric Inventory Questionnaire (NPI-Q) total scores (neuropsychiatric model).

Result: The LGCM of longitudinal PACC-5 scores yielded adequate model fit for a linear model ($X^2(16)=67.5$, $p < .001$, CFI = 0.93, SMRM=0.07, AIC=1437.10). The baseline PACC score was -0.03 ($SE = 0.05$, $p = .533$) and average cognition declined slightly over time by -0.13 ($SE = 0.01$, $p < .001$). The biological model showed an improvement in fit, with an AIC of 742.30. Here, we observed a positive relationship between plasma Aß42/40 and the intercept ($B = 7.60$, $SE = 3.01$, $p = .012$) and a negative relationship between plasma ptau181 and the intercept ($B = -0.22$, $SE = 0.09$, $p = .016$). Plasma Aß42/40 was the only significant predictor of the PACC5 slope in this model ($B = 1.35$, $SE = 0.62$, $p = .030$). In comparison, the AIC value for the neuropsychiatric model was 1341.17, with the GDS total score being negatively related to the PACC5 slope ($B = -0.03$, $SE = 0.01$, $p = .009$).

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Conclusion: These results add to gaining a better understanding of SCD trajectories and specific predictors of cognitive decline, which is relevant to power future clinical trials in this population.