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THE ROLE OF LOW ANXIETY SCORES ON NOVELTY RESPONSES IN PRECLINICAL ALZHEIMER'S GROUPS

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BACKGROUND AND AIM: This study aims to explore the relationship between anxiety scores and amygdala novelty responses across different stages of preclinical AD.

METHODS: (Ethic Committee: 20190327_SOP-DM- 14_A01_V01_Antrag_auf_Abgabe_von_Daten_Biomaterialproben Page): The study included 185 participants categorized into Healthy Controls (n = 56), Subjective Cognitive Decline (n = 86), and Mild Cognitive Impairment (n = 43). SCD and MCI diagnoses were made according to Jessen et al. 2014 and NIAA-AA 2011 diagnostic criterias, respectively. Anxiety levels were assessed using the short form of the Geriatric Anxiety Inventory (GAIS-SF), while functional MRI (fMRI) measured amygdala responses to novel stimuli. Every groups in the study were divided into two; the first group consisted of people with a GAI-SF score of 0; the second group consisted of people with a score of 1 and above. Cerebrospinal fluid (CSF) biomarkers, including p-Tau and t- Tau, were used to classify tau pathology. Preclinical Alzheimer's Cognitive Composite 5 (PACC5) designed to detect subtle cognitive changes in the preclinical stage of Alzheimer's disease.

RESULTS: Anxiety symptoms were significantly elevated in the SCD and MCI groups compared to healthy controls ($p < 0.001$). Despite this, there was no significant association between anxiety severity and amygdala novelty responses across diagnostic groups. Furthermore, tau pathology (p-Tau, t-Tau) did not show a significant interaction with anxiety symptoms in predicting amygdala activity. The absence of a clear relationship may be influenced by the generally low severity of anxiety symptoms within the study cohort, potentially limiting the detection of neural alterations.

CONCLUSIONS: This study suggests that how anxiety scores do not significantly alter amygdala novelty responses. The low anxiety scores are due to the fact that people with major psychiatric disorders were not included in the study. This narrows the scope of the study and can be considered as a limitation. It's thought that this situation will shed light on future studies.

Keywords: Anxiety, novelty response, tau, alzheimer