Predictors of amyloid positivity in persons with subjective cognitive decline

poster

Olin Janssen, Willemijn Jansen, Stephanie Vos, Rik Ossenkoppele, Frans Verhey, Frank Jessen, Pieter Jelle Visser

Submitted: 15:45 24 Jul

Keywords: amyloid, subjective cognitive decline, alzheimer

Abstract

Background: To identify at-risk individuals that will likely benefit from disease-modifying treatment and improve selection for clinical trials, the role of unobjectified cognitive complaints (subjective cognitive decline, SCD) in preclinical Alzheimer's Disease (AD) needs to be refined. Although persons with SCD are at increased risk of developing dementia, it is unclear whether SCD is a symptomatic indicator of preclinical AD. We aim to identify SCD characteristics that are associative of amyloid positivity and are thus indicative of preclinical AD.
Methods: We included 1,336 persons with SCD from 14 centers included in the Amyloid Biomarker Study. Amyloid-ß deposition was measured with positron emission tomography or cerebrospinal-fluid biomarkers and dichotomized as normal or abnormal according to study-specific cut-offs. SCD characteristics included were subjective decline in memory, informant confirmation of SCD, concerns about complaints, feelings of worse performance, subjective decline in attention and concentration, depression, anxiety, and setting. Generalized-estimating-equations adjusting for center were used to examine the association between SCD characteristics and amyloid positivity.
Results: Average age was 66.5 years, 52% were female, mean education was 14.2 years, 33% was APOE-ε4 positive, 19% was amyloid positive, 21% was t-tau positive, and 30% was p-tau positive. Increased age ($p<0.001$) and APOE-ε4 carriership ($p<0.001$) were associated with a higher probability of amyloid positivity. Subjective decline in memory was associated with an increased probability of amyloid positivity (25% vs. 19% for persons without subjective decline specific to memory, mean difference 9%, $p=0.036$). The probability of amyloid positivity differed according to setting and was higher in a memory clinic setting (29%) compared to research setting (15%) and population setting (5%). The other SCD characteristics were not associated with amyloid positivity. Age, APOE-ε4 carriership, subjective decline in memory, and setting remained independent predictors of amyloid positivity when analysed combined.
Conclusion: Age, APOE-ε4 carriership, subjective decline in memory, and setting are important characteristics to identify preclinical AD in persons with SCD. We propose assessment of the combination of these factors to benefit clinical trial recruitment of SCD participants in the preclinical phase of AD.