

Neuropsychiatry and behavioral neurology/presymptomatic disease/prodromal disease/prodromal states

Screening characteristics of *PSEN1* E280A mutation carriers and non-carriers in the API Autosomal Dominant Alzheimer's Disease Colombia Trial

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Abstract

Background: The Colombia Alzheimer's Prevention Initiative (API) Registry was a resource for enrollment into the API Colombia clinical trial. Potentially eligible candidates from the Colombia API Registry went through a prescreening and then in-person screening process with the goal of enrolling them in the API ADAD Colombia Trial. Analysis of screening data might provide additional information to consider for other AD prevention trials. We present descriptive screening data from the API ADAD Colombia trial in *Presenilin 1* (*PSEN1*) E280A mutation carriers vs non-carriers.

Method: Consent was obtained from 319 potentially eligible participants after prescreening. Screening data from 315, including 210 mutation carriers, were used to compare demographics, medical comorbidities, toxic and reproductive antecedents, selected clinical, functional, and anthropometric measurements, vital signs, and brain MRI and laboratory results in the mutation carrier and non-carrier groups. Descriptive statistics comparing mutation carriers and non-carriers were performed using generalized linear regression models using link function according to whether the outcome was categorical or numerical. Results were adjusted for age, sex, level of education, depression or body mass index (BMI) depending upon which measurements were compared.

Result: Results of the above characteristics at screening for carriers and non-carriers will be presented. Briefly, compared to mutation non-carriers in screening, carriers were younger (mean 40 vs 48 years), had similar educational attainment (mean 8.3 vs 7.5 years), and showed generally lower cognitive performance, especially in memory (e.g., mean (sd) CERAD world list scores were 20.30 (3.82) vs 19.46 (3.68), respectively). There were no differences in other demographic characteristics,

medical comorbidities, toxic and reproductive antecedents, anthropometric measurements, vital signs, MRI findings or laboratory results. Mutation non-carriers compared to carriers showed a non-significant trend towards more vascular risks according to medical comorbidities (hypertension, dyslipidemia), borderline higher level of triglycerides and cholesterol, microvascular changes in the brain and higher BMI. The higher prevalence of vascular risk factors among non-carriers may be explained by an 8-year age difference between non-carriers vs carriers.

Conclusion: The API ADAD Colombia Trial screening data provide insights into demographics as well as clinical, cognitive and non-cognitive characteristics, and medical comorbidities of a (PSEN1) E280A population.