Project Summary Report

YODA Project Protocol #: 2021-4548

Getting new insight out of failed Alzheimer Disease trials

Status: Analysis completed and article has been prepared for dissemination, publication remains pending.

Abstract from article prepared by investigators:

Objective
This study's objectives were to (1) develop a methodology for predicting Alzheimer's disease (AD) progression in mild-to-moderate patients, distinguishing between slow and fast decliners over 18 months; (2) identify a subset of critical variables that could simplify patient data collection.

Methods
Random Forest (RF) modeling was used to predict AD progression, utilizing data from failed bapineuzumab Phase 3 clinical trials available on the Yale University Open Data Access (YODA) platform. The dataset included 286 variables collected over 18 months from over 2,000 patients.

Results
The model successfully distinguished between slow and fast decliners after 18 months, based on baseline scores. Notably, this prediction accuracy was achieved using just 15 key variables.

Conclusions
The RF model met both objectives: accurately predict AD progression and identify a minimal set of essential variables. Ultimate goals of this research were to better inform patient treatment decisions and optimize future AD clinical trial designs.