

Title: APOE gene associated with lipid-related traits in Hispanic population

Author's: Lozano S., Lee Avila M., *Xu C.

* Dr. Xu is mentor and corresponding author

Corresponding author's affiliation: University of Texas Rio Grande Valley, Brownsville, Texas, U.S.

Background: High levels of cholesterol have been demonstrated to cause heart disease and stroke. There is a significant research in cardiovascular disease, apolipoprotein E (APOE) gene and high cholesterol regarding non-Hispanics, but as of now there is limited research regarding APOE e4 allele associated with high levels of cholesterol in the Hispanic population. There are three types of alleles e2 being the protective allele against neurological diseases, e3 the most common type, and e4 known to be the high-risk allele for diseases. This research aims to study the correlation between APOE e4 allele and phenotypes that demonstrate a high risk for elevated levels of cholesterol in Hispanic population to be able to be educated and prevent.

Methods: Data was collected from both the Texas Alzheimer's Research and Care Consortium (TARCC) (N=1,320) and the Initial Study of Longevity and Dementia from the Rio Grande Valley (ISLD-RGV) (N=62) with a total of 1,382 participants. Questionnaires that included demographics, medical history, and blood/saliva samples were collected. The Statistical Package for Social Sciences (SPSS) version 26 was used to identify if the APOE e4 allele was associated with several cholesterol related phenotypes in the subjects.

Results: Results demonstrated a statistically significant association between APOE e4 allele and high levels of cholesterol in the Hispanic population.

Conclusion: The findings of this research will help us with early diagnosis and interventions for patients with a risk for high cholesterol related diseases such as cardiovascular disease.