Examining APOE gene associated with diabetes and hypertension of the Hispanic population in the Rio Grande Valley.

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Background:
In the United States, 11.3% of the population has diabetes. Diabetes is a group of chronic health conditions that affects blood sugar uptake into cells for energy. There are different types of diabetes characterized by different pathophysiologies, with the most common being Type 1 Diabetes Mellitus where there is a total lack of insulin, and Type 2 Diabetes Mellitus where peripheral tissues become insulin resistant. Over time, these conditions can cause many different health issues that decrease the quality of life. In addition, Hispanic people are twice as likely to develop Type 2 diabetes than non-Hispanic White people. In our study, we are investigating a known gene, APOE, that directly corresponds with diabetes and hypertension in the U. S Hispanic population.

Methodology:
A total of 200 Hispanic subjects were collected from the Rio Grande Valley (N = 200). Questionnaires from demographics, lifestyles, medical history and saliva samples were collected. We genotyped for the APOE gene based on two SNPs, with statistical analysis being performed through Chi-squares tests, independent sample t-test, and multivariable logistic regression models using SPSS version.

Results:
Current findings have indicated that there is a higher index of Hispanics with diabetes (33%) and hypertension (55.7%). Preliminary findings also show that there is a higher frequency of individuals with ε3/ε3 that any of the other genotypes. In addition, APOE allele ε3 has the highest allele frequency (88.49% We are working on genetic associations of APOE gene with diabetes (33%) and hypertension currently.

Conclusion:
APOE alleles have shown increased risks of diabetes and hypertension in Hispanics. However, further research is needed to confirm our current findings for this specific population