APOE gene associated with dementia related traits, depression and anxiety in the Hispanic population.

Daniela Gamez
The University of Texas Rio Grande Valley, daniela.gamez01@utrgv.edu

Erika Guajardo
The University of Texas Rio Grande Valley, erika.guajardo01@utrgv.edu

Aida Galvan Gutierrez
The University of Texas Rio Grande Valley

Victoria I. Padilla
The University of Texas Rio Grande Valley

Stephanie Lozano
The University of Texas Rio Grande Valley

See next page for additional authors

Presenter Information (List ALL Authors)
Daniela Gamez, Erika Guajardo, Aida Galvan Gutierrez, Victoria I. Padilla, Stephanie Lozano, Mario Gil, Gladys E. Maestre, KeSheng Wang, and Chun Xu

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Gamez D.[1], Guajardo E.[1], Galvan A.[1], Padilla V.[1], Lozano S.[2], Gil M.[3], Maestre G.[4], Wang W.[5], Xu C.[1]

[1] Department of Health and Biomedical Science, College of Health Affairs, University of Texas Rio Grande Valley, TX, USA;
Chun Xu: chun.xu@utrgv.edu (C.X.); Victoria Padilla: victoria.padilla01@utrgv.edu (V.P.); Daniela Gamez: daniela.gamez01@utrgv.edu (D.G.); Erika Guajardo: erika.guajardo01@utrgv.edu (E.G.); Aida Galvan: aida.galvangutierrez01@utrgv.edu (A.G.)

[2] Department of Science, Graduate College of Biochemistry and Molecular Biology, University of Texas Rio Grande Valley, TX, USA; Stephanie Lozano: stephanie.lozano01@utrgv.edu (S.L.)

[3] Department of Psychological Science, University of Texas Rio Grande Valley, Brownsville, TX. Department of Neuroscience, School of Medicine, University of Texas Rio Grande Valley, Harlingen, TX. Institute for Neuroscience, School of Medicine, University of Texas Rio Grande Valley, Harlingen, TX; Mario Gil: mario.gil@utrgv.edu (M.G.)

[4] Neuroscience and School of Medicine, University of Texas Rio Grande Valley, TX, USA; Gladys Maestre: gladys.maestre@utrgv.edu (G.M.)

[5] Department of Family and Community Health, School of Nursing, Health Sciences Center, West Virginia University, Post Office Box 9600 – Office 6419, Morgantown, WV 26506, USA; Kesheng Wang: kesheng.wang@hsc.wvu.edu (K.W.)

Background

Alzheimer's disease (AD) is one of the most common neurodegenerative disorders that has been associated with a strong genetic component. In addition, AD is often comorbid with neuropsychiatric conditions, some of which are early indicators of the disease. Specific demographic factors and genetic variants have been identified as risks in non-Hispanic populations; however, there are limited studies observed on the Hispanic population. Therefore, in our current study, we focused on investigating a known gene, APOE, that is associated with AD-related phenotypes and two psychiatric diseases (depression and anxiety) within the U.S. Hispanic population.

Methods

A total of 1,382 subjects were collected from 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). Questionnaires for demographics, lifestyle, medical history, and blood/saliva samples were collected. We genotyped for the APOE gene based on two single nucleotide polymorphisms. Statistical analysis was performed using Chi-square tests, independent samples t-tests and multivariable logistic regression models using SPSS version 26.

Results

Current finding indicated that APOE-ε4 was associated with not only AD ($p<0.0001$), but also anxiety ($p<0.0001$) and depression ($p=0.0004$). However, APOE-ε3 was associated with depression ($p=0.002$) in the Hispanic population. We provide additional evidence in which APOE-ε4 increased the risk for AD in Hispanics.

Conclusions

For the first time, APOE alleles show increased risks for anxiety and depression in Hispanics. However, further research is warranted to confirm the current findings regarding this population.