PUBLICACIONES CIENTÍFICAS

PRIMER TRIMESTRE 2025

ENERO

Differences and contributors to global cognitive performance in the underrepresented Latinx Parkinson's disease population

Autores: Saar Anis, Henry Mauricio Chaparro-Solano, Thiago Peixoto Leal, Scott A Sperling, Claire Sonneborn, Camila Callegari Piccinin, Miguel Inca-Martinez, Mario Cornejo-Olivas, Maryenela Illanes-Manrique, Pedro Chana-Cuevas, Paula Safie Awad, Ana Jimena Hernández-Medrano, Amin Cervantes-Arriaga, Artur F S Schuh, Carlos R M Rieder, Pedro Braga-Neto, Antonio Andrei da Silva Sena, Bruno Lopes Santos-Lobato, Emilia M Gatto, Griselda J Alvarado, Cesar L Avila, Vitor Tumas, Maria Paula Foss, Vanderci Borges, Henrique Ballalai Ferraz, Jorge Luis Orozco Vélez, Beatriz Muñoz Ospina, Sonia Moreno, David Pineda, Julia Esther Rios Pinto, Patricio Olguín, Juan Cristobal Nuñez, Angel Viñuela, Alan O Espinal-Martinez, Nicanor Mori, Koni Mejía-Rojas, Angel Medina-Colque, Ana Lucia Zuma Rosso, Celmir Vilaça, Edward Ochoa-Valle, Iván Cornejo-Herrera, Paula Reyes-Perez, Alejandra Lázaro-Figueroa, Anna Letícia de Moraes Alves, Rubens Gisbert Cury, Hubert H Fernandez, Ignacio Mata

Revista: The Clinical Neuropsychologist
DOI: 10.1080/13854046.2025.2450020

Resumen:
Objective: Despite significant progress in understanding the factors influencing cognitive function in Parkinson's disease (PD), there is a notable gap in data representation for the Latinx population. This study aims to evaluate the contributors to and disparities in cognitive performance among Latinx patients with PD. Methods: A retrospective analysis was conducted based on cross-sectional data encompassing demographic, environmental, motor, and non-motor disease characteristics from the Latin American Research Consortium on the Genetics of PD (LARGE-PD) and the Parkinson's Progression Markers Initiative (PPMI) cohorts. Linear regression multivariable models were applied to identify variables affecting Montreal Cognitive Assessment (MoCA) scores, accounting for age, sex, and years of education. Results: The analysis comprised of 3,054 PD patients (2,041 from LARGE-PD and 1,013 from PPMI) and 1,303 Latinx-controls. Latinx-PD patients (mean age 63.0 ± 11.8, 56.8% male) exhibited a significantly lower average MoCA score ($p < .001$) compared to white Non-Hispanic PD patients from PPMI (mean age 67.5 ± 9.9, 61.7% male). This difference persisted when comparing the Latinx-PD to the Latinx-controls (mean age 58.7 ± 9.3, 33.2% male; $p < .001$). Factors significantly associated with better MoCA scores in Latinx-PD included unilateral symptom onset ($p = .009$), and higher educational attainment ($p < .001$). Conversely, those associated with worse scores included the use of dopamine agonists ($p = .01$), previous tobacco use ($p = .01$), older age ($p < .001$), and a higher Hoehn and Yahr scale score ($p < .001$). Conclusions: Latinx-PD patients demonstrated significantly lower cognitive scores compared to their white non-Hispanic PD counterparts and Latinx-controls. These results highlight the importance of interpreting MoCA scores in a nuanced manner within diverse populations.

FEBRERO

Novel Intermediate ATXN10 Alleles in the Healthy Peruvian Population: A Matter of Indigenous American Ethnic Origin

Autores: Karina Milla-Neyra, Ismael Araujo-Aliaga, Carla Manrique-Enciso, Elison Sarapura-Castro, Maryenela Illanes-Manrique, Diego Veliz-Otani, Ana Saldarriaga-Mayo, Angel Medina-Colque, Julia Rios-Pinto, Ivan Cornejo-Herrera, Andrea Rivera-Valdivia, Ignacio F. Mata, Douglas Loesch, Leonel Lozano-Vasquez, Tanuja Bordia, Timothy O'Connor, Birgitt Schüle & Mario Cornejo-Olivas

Revista: The Cerebellum
DOI: https://doi.org/10.1007/s12311-025-01795-1

Resumen:
Spinocerebellar ataxia type 10 (SCA10) is a neurodegenerative disease predominant in Latin American individuals with Indigenous American ancestry. SCA10 is caused by an expansion of ATTCT repeat within the ATXN10 gene. Healthy individuals carry 9–32 ATTCT repeats, whereas SCA10 patients carry an expansion of 280 repeats and higher. Recently, intermediate alleles (over than 32 repeats) have been identified in healthy Peruvian Indigenous American individuals, with unclear significance. This study aims to characterize the variability of the ATTCT repeats within the ATXN10 gene across self-declared Indigenous American and Mestizo subpopulations from Peru. A total of 871 samples (754 Mestizo and 117 Indigenous American) were analyzed using PCR, and RP-PCR when suspecting apparent homozygosity due to larger alleles. 8.7% of the total of healthy individuals (76/871) carry at least one intermediate allele. The 14-repeat allele being the most common for both subpopulations (41.5%). Intermediate alleles were detected in the Peruvian population (4.5%) with a significantly higher frequency among self-declared Indigenous American compared to Mestizo, suggesting a possible association with the ethnic origin. The G allele at the SNP rs41524547 had a frequency of 51.39% in individuals with intermediate alleles, with not significantly difference between subpopulations. Further analysis should be performed to confirm the size and composition of ATTCT repeat tract, as well as the contribution of rs41524547 in SCA10.

Comparing Alzheimer's genes in African, European, and Amerindian induced pluripotent stem cell-derived microglia

Autores: Sofia Moura , Luciana Bertholim Nasciben , Aura M Ramirez 1, Lauren Coombs, Joe Rivero , Derek J Van Booven , Brooke A DeRosa, Kara L Hamilton-Nelson , Patrice L Whitehead , Larry D Adams, Takiyah D Starks , Pedro R Mena , Maryenela Illanes-Manrique , Sergio Tejada , Goldie S Byrd , Mario R Cornejo-Olivas, Briseida E Feliciano-Astacio , Karen Nuytemans, Liyong Wang, Margaret A Pericak-Vance , Derek M Dykxhoorn , Farid Rajabli , Anthony J Griswold 1 6, Juan I Young, Jeffery M Vance

Revista: Alzheimer's & Dementia
DOI: https://doi.org/10.1002/alz.70031

Resumen:
INTRODUCTION
Genome-wide association studies (GWAS) studies in Alzheimer's disease (AD) demonstrate ancestry-specific loci. Previous studies in the regulatory architecture have only been conducted in Europeans (EUs), thus studies in additional ancestries are needed. Given the prevalence of AD genes expressed in microglia, we initiated our studies in induced pluripotent stem cell (iPSC) -derived microglia.
METHODS
We created iPSC-derived microglia from 13 individuals of either high Amerindian (AI), African (AF), or EU global ancestry, including both AD and controls. RNA-seq, ATAC-seq, and pathway analyses were compared between ancestries in both AD and non-AD genes.
RESULTS
Twelve AD genes were differentially expressed genes (DEGs) and/or accessible between ancestries, including ABI3, CTSB, and MS4A6A. A total of 5% of all genes had differential ancestral expression, but differences in accessibility were less than 1%. The DEGs were enriched in known AD pathways.
DISCUSSION
This resource will be valuable in evaluating AD in admixed populations and other neurological disorders and understanding the AD risk differences between populations.

Efficacy of Pressure Cooker Technique in Redo Embolization for High-Flow Torcular Dural Sinus Malformation

Autores: Frank Gleb Solis Chucos , Rosa Lizbeth Ecos Quispe , Mauro Toledo , Melanie Walker , René Chapot

Revista: Neurointervention
DOI: 10.5469/neuroint.2024.00556

Resumen: Torcular dural sinus malformations (tDSMs) with high-flow fistulas pose complex management challenges due to their vascularity and the delicate neuroanatomy involved. This report presents the case of a child with tDSM and hydrocephalus, who underwent 3 staged embolization procedures but required a redo intervention due to residual malformation and venous hypertension. Utilizing the pressure cooker technique (PCT) in a redo setting allowed for high-pressure, targeted embolic delivery with minimized reflux, achieving near-complete occlusion and significant symptom relief. This case highlights PCT's potential to improve outcomes in multi-stage treatments of high-flow tDSM, reducing reflux and enhancing safety in technically demanding cases.

MARZO

Delayed diagnosis of ataxia with oculomotor apraxia type 2 in a Peruvian patient, a case report

Autores: Leonardo Cruz-Criollo, Wilhelm Dávila-Salazar, Elison Sarapura-Castro, Andrea Rivera-Valdivia, Jeny Bazalar-Montoya, Krista Bluske, Julie Taylor, Erin Thorpe, Akanchha Kesari, Ryan J Taft, Mario Cornejo-Olivas

Revista: Clinical Neurology and Neurosurgery
DOI: 10.1016/j.clineuro.2025.108823

Resumen:
Introduction: Ataxia with oculomotor apraxia type 2 (AOA2) is a rare autosomal recessive cerebellar ataxia characterized by progressive cerebellar ataxia, sensorimotor peripheral neuropathy, and occasional oculomotor apraxia.

Case report: A 50-year-old male with a history of orthopedic shoe use since childhood presented with slowly progressive ataxia and neuropathy. Laboratory tests showed elevated serum alpha-fetoprotein levels and increased total cholesterol. Clinical whole genome sequencing identified a c.4853C > G (p.Ser1618Ter) homozygous pathogenic variant in SETX.

Conclusion: The case highlights the challenges identifying rare disorders like AOA2 due to limited access to genetic testing and socioeconomic and healthcare barriers.

Generalizability of tau and amyloid plasma biomarkers in Alzheimer's disease cohorts of diverse genetic ancestries

Autores: Anthony J Griswold, Farid Rajabli, Tianjie Gu, Jamie Arvizu, Charles G Golightly, Patrice L Whitehead, Kara L Hamilton-Nelson, Larry D Adams, Jose J Sanchez, Pedro R Mena, Takiyah D Starks, Maryenela Illanes-Manrique, Concepcion Silva, William S Bush, Michael L Cuccaro, Jeffery M Vance, Mario R Cornejo-Olivas, Briseida E Feliciano-Astacio, Goldie S Byrd, Gary W Beecham, Jonathan L Haines, Margaret A Pericak-Vance

Revista: Alzheimer's & Dementia
DOI: https://doi.org/10.1002/alz.14367

Resumen:
INTRODUCTION
Plasma phosphorylated threonine 181 of tau (pTau181) and amyloid beta (Aβ) are biomarkers for differential diagnosis and preclinical detection of Alzheimer disease (AD). Given differences in AD risk across diverse populations, the generalizability of existing biomarker data is not assured.
METHODS
In 2086 individuals of diverse genetic ancestries (African American, Caribbean Hispanic, and Peruvian), we measured plasma pTau181 and Aβ42/Aβ40. Differences in biomarkers between cohorts and clinical diagnosis groups and the potential discriminative performance of the two biomarkers were assessed.
RESULTS
pTau181 and Aβ42/Aβ40 were consistent across cohorts. Higher levels of pTau181 were associated with AD, while Aβ42/Aβ40 had minimal differences. Correspondingly, pTau181 had a greater predictive value than Aβ42/Aβ40; however, the area under the curve differed between cohorts.
DISCUSSION
pTau181 as a plasma biomarker for clinical AD is generalizable across genetic ancestries, but its predictive value may vary. Combining genomic and biomarker data from diverse individuals will increase understanding of genetic risk and refine clinical diagnoses.

Epidemiology of Autosomal Dominant Spinocerebellar Ataxias in Latin America: A Systematic Review and Meta-Analysis

Autores: Milagros Galecio-Castillo, Jesus Gutierrez-Arratia, Alonso Abad-Murillo, Elison Sarapura-Castro, Ismael Araujo-Aliaga, Ana Saldarriaga-Mayo, Maryenela Illanes-Manrique, Mario Cornejo-Olivas

Revista: The Cerebellum
DOI: 10.1007/s12311-025-01826-x

Resumen:
The Spinocerebellar Ataxias (SCAs) are a group of autosomal dominant neurodegenerative disorders characterized by progressive cerebellar ataxia, affecting motor coordination. SCAs are reported globally with large geographical and ethnic differences. This systematic review and meta-analysis aimed to update the frequency, and geographic distribution of SCAs in Latin America, including recently identified SCAs like SCA27B. We conducted a systematic search in PubMed, Scopus, LILACS, SciELO, and Web of Science databases, including studies published from inception to January 2025. We included 27 studies for the systematic review and 18 studies for the meta-analysis that met the inclusion criteria, representing a total of 5859 participants across eleven countries. Our meta-analysis revealed that about 50% (95% CI 26-74%) of hereditary ataxias in Latin America were confirmed to have a genetic diagnosis of SCA. The included participants with a known SCA have the following proportions: MJD/SCA3 (15%), SCA2 (11%), SCA7 (4%), SCA10 (3%), and SCA1 (3%). Geographic distributions were notable, MJD/SCA3 in Brazil, SCA2 in Cuba, Argentina and Mexico, SCA10 predominating in Peru, and SCA7 in Venezuela. Recently identified SCA types, like SCA27B and one case of SCA4, were identified in Brazil. In 22 countries there are no published studies on the epidemiology of SCAs. The distribution of SCAs in Latin America reflects the influence of historical migrations, founder effects, and ancestries, emphasizing regional heterogeneity. Our findings underscore the critical need for further epidemiological studies, particularly in understudied countries in the region.

Risk and impact of stroke across 38 countries and territories of the Americas from 1990 to 2021: a population-based trends analysis from the Global Burden of Disease Study 2021

Autores: Ramón Martinez, Paula Muñoz-Venturelli, Pedro Ordunez, Felipe Fregni, Carlos Abanto, Matias Alet, Tony Fabián Alvarez, Pablo Amaya, Sebastian Ameriso, Antonio Arauz, Miguel A Barboza, Hernán Bayona, Antonio Bernabé-Ortiz, Juan Calleja, Vanessa Cano-Nigenda, Leonardo Augusto Carbonera, Rodrigo M Carrillo-Larco, Angel Corredor, Ana Cláudia de Souza, Claudio Jimenez, Fernando Lanas, Sheila Martins, Victor Navia, Nelson Novarro-Escudero, Verónica Olavarría, Bruce Ovbiagele, Kevin Pacheco-Barrios, Octavio Pontes-Neto, Virginia Pujol, Alejandro Rabinstein, Julieta Rosales, Andrés Rosende, Gisele Sampaio Silva, Gustavo Saposnik, Souvik Sen, Fernando D Testai, Victor Urrutia, Craig S Anderson, Pablo M Lavados

Revista: The Lancet Regional Health - Americas
DOI: 10.1016/j.lana.2025.101017

Resumen:
Background: Despite substantial declines in burden over time, stroke remains a public health threat in the Americas. This study aimed to assess the current magnitude, trends, and disparities in the estimates of stroke burden by sex and age in the Americas from 1990 to 2021.
Methods: Estimates from the Global Burden of Disease, Injuries and Risk Factors Study 2021 were used to analyze incidence, prevalence, mortality, years of life lost due to premature death, years lived with disabilities, and disability-adjusted life years (DALYs) caused by stroke and its major subtypes stratified by age, and sex in the Americas from 1990 to 2021. We used Joinpoint regression analysis to estimate the average annual percent change (AAPC) of stroke mortality and disease burden outcomes and assessed trends.
Findings: In 2021, there were 1.1 million (95% uncertainty interval: 1.0-1.2) new cases, 12.9 million (12.3-13.7) prevalent cases, 0.5 million (0.5-0.6) deaths, and 11.4 million (10.6-12.1) DALYs due to stroke in the Americas. The absolute number of stroke burden outcomes increased from 1990 to 2021, but their corresponding age-standardized rates significantly declined. A deceleration in reduction rates of burden outcomes for all strokes and most stroke subtypes occurred over the last decade, with pronounced difference between sexes mainly in incidence among younger groups. From 2015 to 2021, trends in incidence rates from all stroke and stroke subtypes reversed to increase in most age groups, and strikingly, trends in mortality and DALY rates from ischemic stroke among younger populations reversed to upward with AAPC over 1.4%. A substantial number of countries contributed to these increasing trends.
Interpretation: Regionally, the annual number of stroke cases and deaths significantly increased from 1990 to 2021, despite reductions in age-standardized rates. The declining pace in age-standardized stroke rates has decelerated in recent years, while trends in incidence, and ischemic stroke mortality and DALY among middle-aged adults and adults, reversed towards upward in the period 2015-2021. Further studies are needed to understand the determinants of this recent pattern and identify the most cost-effective interventions to stem this alarming trend.
Funding: There was no funding source for this study.