DOI: 10.1002/alz.047721

CLINICAL MANIFESTATIONS

POSTER PRESENTATIONS

Alzheimer's & Dementia®
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

Developing topics

Alzheimer's Association International Cohort Study of Chronic Neuropsychiatric Sequeale of SARS-CoV-2 (CNS-SARS-CoV-2)

Gabriel A. de Erausquin[1,2] | Ignacio Brusco[3] | Hernan Zamponi[4] | Perminder S. Sachdev[5] | Guillermo Rivera Arroyo[6] | Juan Matias Santos[7] | Yueqin Huang[8] | Antonio Caballero[9] | Niels Ole Mors[10] | Terry Brugha[11] | Elizabeta Mukaetova-Ladinska[11] | Golo D. Kronenberg[11] | Mohammad Zia Katshu[12] | Ekkehart Staufenberg[13] | Venos Mavreas[14] | Rajesh Sagar[15] | Vasantha Padma[16] | Vijayalakshmi Ravindranath[17] | Kameshwar Prasad[15] | Corrado Barbui[18] | Giovanni Ostuzzi[18] | Fokko J. Nienhuis[19] | M. Arfan Ikram[20] | Carla Gallo[21] | Yuri L. Cutipé Cardenas[22] | Suchat Paholpak[23] | Mary Ganguli[24] | Pamela Y. Collins[25] | Sudha Seshadri[26] | Giovanni D'Avossa[27] | Alberto Salmoiraghi[28] | Maria C. Carrillo[29] | Heather M. Snyder[29] | Tarun Dua[30]

[1] University of Texas Health San Antonio, San Antonio, TX, USA

[2] Glenn Biggs Institute for Alzheimer's and Neurodegenerative Diseases, San Antonio, TX, USA

[3] Universidad de Buenos Aires, Buenos Aires, Argentina

[4] Ministerio de Salud de Jujuy, Jujuy, Argentina

[5] Centre for Healthy Brain Ageing (CHeBA), University of New South Wales (UNSW) Sydney, Sydney, NSW, Australia

[6] Universidad de Santa Cruz de la Sierra, Santa Cruz de la Sierra, Bolivia

[7] Universidad de Talca, Talca, Chile

[8] Peking University, Beijing, China

[9] Hospital General "Enrique Cabrera", La Habana, Cuba

[10] Aarhus University, Aarhus, Denmark

[11] University of Leicester, Leicester, United Kingdom

[12] University of Nottingham, Nottingham, United Kingdom

[13] Norfolk and Norwich University, Norwich, United Kingdom

[14] University of Ioaninna, Athens, Greece

[15] All India Institute of Medical Sciences, New Delhi, India

[16] All India Institute of Medical Sciences, New Delhi, New Delhi, India

[17] Centre for Neuroscience, Indian Institute of Science, Bengaluru, India

[18] University of Verona, Verona, Italy

[19] University of Groningen, Groningen, Netherlands

[20] Department of Epidemiology, Erasmus University Medical Center, Rotterdam, Netherlands

[21] Universidad Peruana Cayetano Heredia, Lima, Peru

[22] Ministerio de Salud, Lima, Peru

[23] Khon Kaen University, Khon Kaen, Thailand

[24] University of Pittsburgh, Pittsburgh, PA, USA

[25] University of Washington, Seatlle, WA, USA

[26] The Framingham Heart Study, Framingham, MA, USA

[27] Bangor University, Bangor, United Kingdom

[28] Betsi Cadwaladr University Health Board, NHS Wales, Bangor, United Kingdom

[29] Alzheimer's Association, Chicago, IL, USA

[30] World Health Organization, Geneva, Switzerland

Correspondence
Gabriel A. de Erausquin, University of Texas Health San Antonio, San Antonio, TX, USA.
Email: deerausquing@uthscsa.edu

Abstract

Background: The pandemic of SARS-CoV-2 is focusing all energies on the impact on survival of affected individuals, treatment and prevention, but increasingly attention is focusing on its enduring consequences. We established a global consortium to study a longitudinal representative cohort of individuals, to characterize neurological and neuropsychiatric sequalae from direct viral, immune-, vascular- or accelerated neurodegenerative injury to the central nervous system (CNS).

Method: We propose to characterize the neurobehavioral phenomenology associated with SARS-CoV-2 in a large, multinational, longitudinal cohort of post COVID-19 infection patients following three sampling strategies: 1) Opportunity sample of patients discharged after hospital admission for COVID-19 related symptoms. 2) A stratified random sample from COVID-19 testing registries (including asymptomatic and negative participants). 3) Ascertaining COVID-19 exposure (antibody) status in ongoing longitudinal, community-based cohort studies that are already collecting biosamples, cognitive, behavioral and neuroimaging data. We will obtain core data within 6 months of discharge or testing. Core characterization will include interviews with the Schedules of Clinical Assessment in Neuropsychiatry (SCAN), neurological exams, emotional reactivity scales and a neurocognitive assessment. Wherever feasible, we will also collect neuroimaging, biosamples and genetic data. Longitudinal follow up will be conducted at 9 and 18 months of the initial evaluation. An mHealth *keeping-in-touch* process will be set up to minimize attrition rates. The population cohorts provide a large, unbiased, normative and validation sample, albeit with more heterogenous outcome ascertainment. They also permit examination of pre- and post-COVID trends in symptoms and biomarkers. Since some ethnic groups, as well as in individuals with blood type A, are at higher risk of COVID-19 infection and death, a role of genetics in determining susceptibility to infection and poor outcomes seems well supported. We will collect genome-wide genotypes from our cohort individuals to address the role of ancestry and genetic variation on susceptibility to neuropsychiatric sequelae. High rates of mutation in COVID-19 strongly suggest that viral infectivity, including neurotropism, may not be uniform across countries affected by the pandemic.

Results: Pending.

Conclusion: Our consortium is in a unique position to address the interaction between genetics (including ancestral DNA), and viral strain variation on CNS sequelae of SARS-CoV-2.