IJEPH
Interdisciplinary Journal of Epidemiology & Public Health

International Congress in Neurology, Neurosurgery, Neuropsychiatry and Clinical, Functional and Advanced Neuropsychology

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Disclosure: The authors have no conflicts of interest to declare"

The first "International Congress in Clinical Neurology, Neurosurgery, Neuropsychiatry and Clinical, Functional and Advanced Neuropsychology" held synchronously and asynchronously on October 18,19,20 and 21 of 2022. Was an event created by the research group in basic and applied clinical neurosciences SEMINEC led by PhD Carlos Alberto Hurtado González, with the aim of promoting scientific research conducted by different health professionals in the field of behavioral neurosciences, in order to present different updates covering objectives, analysis, discussions and thematic conclusions.

With the full conviction that it is currently possible to join efforts and work together in the development and consolidation of scientific research and different strategies to improve the functionality of each of the patients.

This congress welcomed national and international multidisciplinary professionals linked to the assessment, evaluation, diagnosis, intervention and treatment proposals for people with neuropsychological and neuropsychiatric disorders; in a scientific bet for the generation of a psychology program in epistemological paths for the improvement of the condition of the patient with neurodegenerative diagnosis. Likewise, to generate new proposals in functional and advanced neurorehabilitation processes for the improvement of the quality of life of patients and the people around them, as well as to strengthen the congress and its publications, as a space for the development and consolidation of national and international scientific research in the field of neurosciences.

The methodology of the congress privileged research production, therefore, each of the invited professional speakers, teachers and students, sent their respective scientific communication and presentation weeks in advance to be approved or corrected until their participation and publication was validated by the congress evaluation committee, whose final function was to consolidate the documents and ensure the publication of this document. With the conviction that this scientific bet opens epistemological ways to improve the condition of the patient with neurodegenerative diagnoses, in response to the challenges of the XXI century as a philosophy of life where evidence, refute and intervene when it is imperative.

The following professionals were present at the congress:

MSc, PhD Carlos Alberto Hurtado González
MSc, PhD Paola Andrea Gutierrez
Psi. Sebastian Ospina Otalvaro
Psi. Carlos Steven Marmolejo Escobar
Psi. Valentina Herrera
Psi. Juan Felipe Ayala
Med Esp. Alejandra Zuñiga
Med Esp. Mario Arroyave Rios
Med Esp. Maryin Rocio Alape Gomez
Med Esp. Carlos Andres Clavijo Prado
Med Esp. David Quebradas
Med Esp. Armando Lucumi Moreno
Med Esp. Adriana Forero
Med Esp. Eder Moreno
Med Esp. Lucely Ortega Bolaños
MSc, PhD Manuel Cañas Lucendo
Med, PhD Sergio Zuluaga

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Med Esp. Natalia Llanos
Med Esp. Beatriz Elena Lucumi
Med Esp. Chirstofer German Valencia Ramos
Med Esp. Nelcy Oñate
Med Esp. Javier Andres lopez zapata
Psi. Luis Miguel Saldarriaga
Psi. Juan Pablo Beltran
Psi. Katherine Medina
Psi. Daney Restrepo
Psi. Alejandro Quintero
Psi. Yainer Drada
Psi. Diana Campuzano
Psi. Odilia Mayorga
Psi. Luigui Andres Torres
Med. Jean Paul Cappellaro
Med. Carlos Andres Marin
Med. Sharon Alvarado
Med. Juan Pablo Jacome
Med. Leidy Montaño
Med Esp. Gemelly Sanchez
Med Esp. Jose Sierra
Med Esp. Daniel Ortega
Med Esp. Alexandra Romero
Med Esp. Santiago Cruz Delgado
Med Esp. Juan Jose Arismedy
Med Esp. Angely Castañeda
Med Esp. Gemelly Sanchez
Med Esp. Jose Miguel Sierra.

Abstracts

Neuropsychiatric Profile of Alterations in Huntington's Chorea Dementia

Quintero-Carabali, A. [1,2]; Drada-Vinasco, Y. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L [2]; Lucumi, A. [3;] Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5];

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Abstract

Introduction: Huntington's chorea (HD) is a most common monogenic neurodegenerative disease with autosomal dominant inheritance, onset with an average age between 15 to 20 years, and cures motor, cognitive, immediate memory, depression, anxiety and apathy complications.
Objective: To identify the different neuropsychiatric disorders presented by a group of patients with dementia due to Huntington's chorea (HD) in early and advanced stages.
Methods: A systematic review of databases such as SAGE Journals, PubMed, Elsevier and Neurology Journals was performed. A total of 100 articles were collected all these having as a basis that they are scientific, in English and selecting 6 articles that were published from 2017 onwards and in this way, we sought to correlate information.
Results: Early signs of Huntington's may be subtle, involving unremarkable impairments in movement speed, cognition, coordination or gait, as well as the appearance of choreic movements and rigidity. Research findings demonstrate findings of volume loss or a volumetric reduction in the head of the caudate nucleus in Huntington's chorea patients overall.
Conclusions: Patients with Huntington's chorea present neuropsychiatric disturbances such as depression, anxiety and apathy as well as a complication or suicidal risk due to their motor status.
Keywords: "Huntington Disease, stages, Neuropsychiatric manifestations, dysfunction neural, deficits".

Molecular and Organic approach to Gerstmann Sträussler-Scheinker Disease and Creutzfeldt-Jakob Disease

Ayala-Rico, J. F. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5];

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Abstract

Introduction: The transmissible spongiform encephalopathies (TSEs) known as prion diseases are a group of pathologies caused by the misfolded form of the cellular prion protein PrPc that gives rise to the aberrant form PrPsc.
Objective: To identify the clinical, molecular and neuroanatomical relationships between two of the most relevant transmissible spongiform encephalopathies (TSE) in the genetic and sporadic context.
Methods: A systematic review of 100 articles in databases such as PubMed, Springer, MDS Journals and Elsevier was carried out. Filtering the same based on the following criteria: scientific articles in English of the last 5 years, indexed in Scimago and Scopus, ranked (Q1-Q3), considering the information of the collected articles, a total of 8 papers were chosen, where each one makes an approach in both pathologies, in the clinical, organic and molecular contexts.
Results: In a proportion of 9 of 11 cases, information on family history of the disease was collected during clinical interviews. This is because, in the later phase, the clinical manifestations of Gerstmann Sträussler-Scheinker Disease (GSS) are often indistinguishable from those of Creutzfeldt-Jakob Disease (CJD). Therefore, the importance of PRNP gene testing is renewed for diagnosing prion disease, as well as detecting possible variations and determining treatments.
Conclusions: There are several tools that facilitate the identification, diagnosis, prognosis and diagnosis of such pathologies, such as specific genetic tests to measure at the molecular level which is the variant of the pathology, biomarker tests in neuroimaging to identify anatomical prodromal conditions, as well as other research criteria related to the advancement of research in the organic and molecular contexts.

Keywords: Prion protein, transmissible spongiform encephalopathy, Creutzfeldt-Jakob disease, CJD, GSS, molecular.

Neuropsychiatric Disorders in Vascular Dementia

Rengifo-Medina, K. [1,2]; Restrepo M. D. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5].

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Abstract

Introduction: In the diagnosis of vascular dementia (VaD), the presence of neuropsychiatric disorders is prevalent, these symptoms are not cognitive, but they do involve alterations in affect, perception and behavior, generating distress, suffering and dependence in functional activities. The neuropsychiatric alterations of VaD are: apathy, irritability, agitation, depression, delirium, hallucinations, anxiety, disinhibition, aberrant motor behavior, sleep and eating disorders.
Objective: Identify neuropsychiatric alterations in vascular dementia.
Methods: A systematic review was carried out in databases such as PubMed, Elsevier. A total of 30 were selected with the following criteria, articles in English, publication not older than 6 years in journals indexed with category [Q1- Q3], 10 articles with a concise approach to the neuropsychiatric alterations of VaD were chosen.
Results: The causes of VaD include ischemic or hemorrhagic brain lesions with hyperintensities of

the white matter, which directly affect the frontal lobe. In VaD, there is a deterioration in the neuro-affective circuits that progressively degenerate the brain, disconnecting the cholinergic projections of the basal cholinergic system of the forebrain.
Conclusions: Neuropsychiatric alterations in VaD depend on the mechanism of the stroke, the degree of tissue loss, the impact on the connectivity of neural pathways and brain regions vital for interaction with the environment.
Keywords: Anxiety, apathy, depression Neuropsychiatric symptoms, and vascular dementia.

Comparative Neurocognitive Profile Between Alzheimer's Disease and HAND

Saldarriaga-Viveros, L. M. [1,2]; Beltran-Alomia, J. P. [1,2]; Restrepo, M. D. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [1]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5];

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Abstract
Introduction: Alzheimer's disease (AD) accounts for 60 to 80 percent of dementia cases. Similarly, HIV AIDS dementia is more progressive in its deterioration than AD and is characterized by slowed thinking and speech, difficulty concentrating and apathy.
Objective: Identify risk factors, incidence and prevalence of the disease, genetic mutations as risk factors and biomarkers of the disease.
Methods: A search of scientific literature was conducted in the following databases: PubMed, Scopus. In order to include the article in the review, it was considered that it was published in a journal indexed by Scimago Journal and Country Rank, with quartile 1- 4, articles in English from the last 6 years. Twenty articles were obtained. We compared 61 participants with HAND, 53 persons with mci - ad and 89 controls, the latter two groups were matched for age and sex.
Results: IVT and MRI scan revealed volumetric reduction with disease compared to controls in multiple regions for both HAND and MCI-AD.
Conclusions: Greater deterioration of subjects with HAND compared to AS. Ventricular enlargement in subjects with HAND. Volumetric reduction in subjects with HAND.
Keywords: Dementia, Alzheimer, Disease, VIH, SIDA, Depression, Aphaty.

Neuropsychiatric Symptoms and Neurocognitive Alterations in Lewy Body Dementia and Parkinson's Disease Dementia

Campuzano-Marquez, D. M. [1,2]; Mayorga-Isaza, O. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez Lenis, P. A. [1,2]; Ortega Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5]

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Abstract
Introduction: Dementia with Lewy bodies (LBD) and Parkinson's disease dementia (PDD) are two pathologies caused by deposits of alpha-synuclein proteins, which develop in nerve cells in brain areas involved in movement and neurocognitive functioning. These neurodegenerative pathologies share common clinical, pathophysiological and morphological features.
Objective: Differentiate neuropsychiatric symptoms and neurocognitive alterations in dementia with Lewy bodies and Parkinson's disease dementia; to make a good differential diagnosis.
Methods: Twenty articles related to the subject were reviewed in portals such as PubMed, Journals and Elsevier, with" and considering Q1 and Q2 journals, from the last 3 years and from researches that differentiate LBD and PDD. The study was conducted with 51 patients (37 - LBD and 14 - PDD) recruited by the Department of Neurology and Neurosurgery of the Hospital of São Paulo, Brazil; all patients underwent MRI and CT scans to exclude vascular lesions and patients with brain lesions or tumors.

Results: We show that PDD and LBD appear to be two possible phenotypes of the same pathological entity, differing mainly by the duration of parkinsonian signs. The fact that some neuropsychiatric features could help to distinguish these two dementias should be considered in future investigations of biomarkers that lead some patients to phenotypically develop LBD, while others develop PDD.
Conclusions: LBD is characterized by the duration of Parkinsonian symptoms, while in PDD they are characterized by a shorter duration; becoming a fundamental aspect for the differential diagnosis.
Keywords: Parkinson's disease dementia, Lewy body dementia, neuropathology, neuropsychiatric symptoms and neurocognitive disorders.

The Impact on Executive Functions in Patients diagnosed with Spinocerebellar Ataxia SCA-17

Marmolejo-Escobar, C. S. T. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5]

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Abstract
Introduction: Spinocerebellar Ataxia 17 (SCA 17) is an autosomal dominant pathology characterized by motor symptoms such as dyskinesias, gait ataxia, involuntary movements, in some cases choreic movements. It also presents non-motor symptoms such as neuropsychiatric disorders such as depression, anxiety, apathy, thinking disorders, among others, as well as patients' manifest alterations in executive functions and severe cognitive impairment leading to dementia.
Objective: To identify the impact on executive functions in patients diagnosed with SCA 17.
Methods: A literature review was conducted in the PUBMED, ScienceDirect, Elsevier and Taylor & Francis databases. The search was performed in compliance with the following inclusion criteria: scientific articles in English from the last 6 years, addressing alterations in executive functions in patients diagnosed with SCA 17.
Results: Due to the neurodegenerative component of SCA 17 there is evidence of progressive deterioration of executive functions, which serves as a predictor of dementia, coupled with the above, a neuropathological correlate is established due to the involvement of the putamen in relation to neuropsychiatric and motor disorders being consistent with the volumetric reduction of the cerebellum, also affecting cognitive functions and executive functions by the severe progressive deterioration generated by this pathology.
Conclusion: According to the review and the data obtained from different studies, there is a severe progressive deterioration of executive functions in patients diagnosed with SCA 17, which in turn serves as a predictor of dementia.
Keywords: Spinocerebellar ataxia 17, SCA17, progressive deterioration, autosomal dominant, neurodegeneration, neuropsychiatric alterations.

Prion Dementias, from molecular to organic. Approaches to Gerstmann Sträussler-Scheinker disease and Creutzfeldt-Jakob disease

Ayala-Rico, J. F. [1,2]. Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5]

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Abstract
Introduction: According to Boon Lead, Longoria, Geschwind; "Prion diseases are a group of neurodegenerative, lethal and untreatable conditions resulting from misfolded prion protein, the cellular form of the prion-related protein PrPc".
Objective: To establish the characteristics of prion dementias in the molecular and organic contexts from the approach to Gerstmann Sträussler-Scheinker disease and Creutzfeldt-Jakob disease.

Methods: A systematic review of 100 articles in databases such as PubMed, Springer, MDS Journals and Elsevier was carried out, from which a total of 31 papers were chosen based on the following criteria: articles indexed in Scimago and Scopus, in Q1-Q3 rank of the last 5 years that present an approach to Creutzfeldt Jakob Disease (CJD) and Gerstmann-Sträussler-Scheinker (GSS) in the article from the molecular and organic context.
Results: Due to the progressive characteristic of the pathology, alterations resulting from the degree of degeneration were found in a general way due to the exponential reduction of the volumetric mass of the brain, which is related to rapidly progressive dementia associated with "cortical ribbon" sign and hyperintensities in the nuclei of the base, as well as positive 14-3-3 protein, findings highly suggestive of a prionopathy.
Conclusions: Prion dementias are rare pathologies that represent a diagnostic challenge and should be considered as a probable cause of rapidly progressive dementia, this also highlights the lack of specific studies to reach a better understanding of the pathology in our population.
Keywords: Prion protein, TSE, Creutzfeldt-Jakob Disease, Gerstmann-Sträussler-Scheinker Disease, Prion Dementia - 14-3-3.

Neuropsychiatric Alterations in Chronic Posttraumatic Encephalopathy

Marmolejo-Escobar, C. S. T. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M.I. [5]

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Abstract
Introduction: Chronic Traumatic Encephalopathy (CTE) is a neurodegenerative pathology characterized by multiple cranioencephalic traumas that over the years end up generating lesions in the cerebral cortex and dysregulation of the TAU protein. It is characterized by severe dysfunction in cognitive functions, severe involvement of neuropsychiatric disorders and aberrant motor behavior.
Objective: Identify neuropsychiatric alterations in CTE.
Methods: A review was carried out in scientific databases, using the following inclusion criteria: scientific articles between 2020 and 2022. Finally, an exclusion process was carried out, where only articles between 2021 and 2022, articles between the Q1-Q2 quartiles were considered. Finally, a total of 5 scientific articles were selected.
Results: Research findings indicate that patients with CTE develop neuropsychiatric disorders such as: thought disorders, depression, anxiety, suicidal ideation, aberrant motor behavior, this is associated with the accumulation of TAU protein in the brain, causing a massive neuronal apoptosis due to lesions and subsequent volumetric reduction, as a result of calcification in the axons of neurons.
Conclusions: Chronic progressive head trauma causes axonal damage resulting in pathogenic expression of TAU and TAR DNA binding protein 43 (TDP43) and induction of neurofilament light polypeptide (NFL), brain-derived neurotrophic factor (BDNF) and serotonin transporter 5 -HTTLPR. As a consequence, immunoreactivity of infiltrating macrophages as well as brain-resident microglia and astrocytes are triggered.
Keywords: Neuropsychiatric disorders, chronic post-traumatic encephalopathy, CTE, craniocephalic trauma, TAU.

Neuropsychiatric Profile in Dementia due to Creutzfeldt-Jakob Disease

Ayala-Rico, J. F. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5]

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Abstract
Introduction: Creutzfeldt-Jakob disease (CJD) is a very aggressive and fatal neurodegenerative pathology caused by a polymorphism in the prion protein gene (PRNP) that generates a misfolding of transmissible proteinaceous infectious particles in the prion protein PrPc into its variant PrPsc.

Objective: To explore the characteristics of the neuropsychiatric profile in the stages of dementia caused by Creutzfeldt-Jakob disease.
Methods: A systematic review of 100 articles in databases such as PubMed, Springer, MDS Journals and Elsevier was carried out. Filtering them based on the following criteria: scientific articles in English of the last 5 years, indexed in Scimago and Scopus, ranked in the first three quartiles (Q1-Q3), with this in mind a total of 9 papers were chosen, where each one made a concise approach to the alterations of the neuropsychiatric profile of CJD.
Results: In cases of CJD, the neuropsychiatric symptoms that accompany the initial symptoms are anxiety, depression, irritability, aggressiveness and apathy, alterations that react poorly to pharmacological treatment. It is also indicated that the relationship between the age of onset of the pathology and the prognosis are essential to perform an intervention in the patient, due to the low prognosis of the pathology and its high range of onset.
Conclusions: Different studies have found that diseases caused by prions tend to overlap with other pathologies and confuse the initial symptoms and signs, generating counterproductive underdiagnosis for their treatment and intervention. Finding that the studies of these issues will lead to new therapeutic targets highlighting the relevance of accurate diagnoses supported by neuroimaging genetic tests, verification by biomarkers or prodromal scans.
Keywords: Prion protein, Transmissible Spongiform Encephalopathy, TSE, Creutzfeldt-Jakob Disease, CJD, Rapidly Progressive Dementia.

Comparative profile of cortical morphology in neurodevelopmental neurocognitive processes between Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD) and control group

Ospina-Otalvaro, S. [1,2]; Hurtado-González, C. A. [1,2,3,4]; Gutiérrez-Lenis, P. A. [1,2]; Ortega-Bolaños, L. [2]; Lucumi, A. [3]; Hernández-Librado, D. C. [4]; Ortiz-Agudelo, M. I. [5]

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Abstract
Introduction: Attention Deficit Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD) are two disorders that belong to the group of neurodevelopmental pathologies. These pathologies share some symptomatology, but at the clinical level they present significant differences that we can relate and compare thanks to the study by neuroimaging, by means of Magnetic Resonance Imaging (MRI).
Objective: To identify how differences in cortical morphology, such as surface area and volume, in ADHD and ASD are related to different neurodevelopmental mechanisms and affect the neurocognitive processes of the infant.
Methods: A systematic review was carried out in databases such as PubMed, SAGE Journals and Elsevier. A total of 55 articles were collected considering the following criteria: scientific articles, published in recent years and that they were articles in English. Finally, 5 articles were selected considering the criteria that were from 2017 onwards and that were from Q1 and Q2 journals, thus seeking to correlate the information.
Results: We found diversity of findings by MRI regarding cortical morphology, such as surface area and volume, in ADHD and ASD.
Conclusions: The current study on cortical morphology in neurodevelopment involved in neurocognitive processes in ADHD and ASD contains significant findings. It allows us to explore symptom dimensions from the neuroanatomical correlation through the use of neuroimaging.
Keywords: ADHD, ASD, Cortical volume, Cortical development, Cortical surface area, Cortical thickness, Gyrification index, Neurocognitive.

Functional Neurorehabilitation Proposals Focused on Motor Memory for Patients with Idiopathic Parkinson's Disease without Dementia (EPISD)

Ortega, D. [1]; Romero, A. [2]; Hurtado-González, C. A. [1,2,3,4]; Ortega-Bolaños, L. [4]; Gutiérrez-Lenis, P. A. [1,2]; Marmolejo-Escobar, C. S. [4]; Ospina-Otalvaro, S. [4]; Ayala-Rico, J. F. [4]; Lucumi, A. [3]; Hernández-Librado, D. C. [1]; Ortiz-Agudelo, M. I. 6

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Abstract
Introduction: EPISD is a neurodegenerative pathology that affects quality of life, basic activities of daily living (ADL) and neurocognitive functioning. Currently there are several types of treatment, including a non-pharmacological approach to functional neurorehabilitation aimed at improving neurocognitive deficits in patients.
Objective: To point out the functional neurorehabilitation proposals focused on motor memory and its benefits in patients with EPISD.
Methods: A systematic literature review was conducted, examining the efficacy of motor memory-focused neurorehabilitation approaches in patients with EPISD published during the last six years (2016- 2022). Data were collected using PubMed, Embase, UpToDate, Scholar Google, Web of Science, and Science Direct databases. Twenty articles were selected. A total of 9 articles were identified of which 6 were excluded after full-text screening and 5 for being duplicates.
Results: It has been found that the new proposals of neurorehabilitation focused on motor memory in patients with EPISD performed with high frequency and intensity (5 times per week) allow improving motor and non-motor symptoms, thus improving their quality of life.
Conclusions: Neurorehabilitation proposals based on motor memory in patients with EPISD have a significant impact on neurocognitive functioning, decreasing dependence to perform ADL, favoring social participation and impacting the quality of life of the subjects.
Keywords: Neurorehabilitation new proposals, motor memory, tango dance therapy Parkinson's disease y Parkinson's disease syndrome.

Neuroanatomical Correlation and Executive Function Deficits in Patients with Wilson's Disease.

Ortega D. [3]; Romero A. [4]; Hurtado-González, C. A. [1,2,3,4]; Ortega-Bolaños, L. [4]; Lenis-Gutiérrez, P. A. [2,4]; Marmolejo-Escobar, C. S. [4]; Ospina-Otalvaro, S. [4]; Ayala-Rico, J. F. [4]; Lucumi, A. [3]; Hernández-Librado, D. C. [1]; Ortiz-Agudelo, M. I. [6]

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Abstract
Introduction: WD is characterized by toxic accumulation of copper especially in the liver and brain. The clinical neurological nosology includes movement disorders associated with bulbar symptoms and includes cerebellar dysfunction, chorea, hyperreflexia, seizures, cognitive impairment and psychiatric manifestations. Neuropsychological evaluations suggest difficulties in subcortical and frontal lobe cognitive functions such as attention, impulsivity, emotional lability and executive function. Deficits were associated with generalized cortical atrophy and/or white matter diffusion abnormalities.
Objective To identify brain structures associated with executive function deficits in patients with Wilson's disease (WD).
Methods: Data were collected from PubMed, Embase, UpToDate, ScholarGoogle, Web of Science, and Science Direct databases. Twenty-two articles were selected. The search was manually supplemented with references from current studies and case reports from the last 6 years. Paper titles were checked for accuracy and duplicates were omitted. Ten articles were identified as meeting the eligibility criteria; 7 articles after full-text screening and 5 duplicates were excluded.
Results: Patients with WD and neurological involvement showed mild impairment in frontal executive capacity, memory, visuospatial processing, abstract reasoning, executive function, processing speed and calculation. Generalized cortical atrophy and/or white matter diffusion abnormalities were associated.
Conclusions: Deficits in executive functions associated with generalized cortical atrophy and/or white matter diffusion abnormalities have been identified in patients with WD. Further studies are required for a complete description of their neuropsychological alterations.
Keywords: Executive functions, Wilson's disease, Neuroanatomical correlation, Neuroimaging Correlates.

The effect of atypical D2 antagonists on executive function. A review of the literature

Sierra-Olea, J. [5]; Sánchez-Valencia, G. [1] Hurtado-González, C. A. [1,2,3,4]; Ortega-Bolaños, L. [4]; Lenis-Gutiérrez, P. A. [2,4]; Marmolejo-Escobar, C. S. [4]; Ospina-Otalvaro, S. [4]; Ayala-Rico, J. F. [4]; Lucumi, A. [3]; Hernández-Librado, D. C. [1]; Ortiz-Agudelo, M. I. [6]

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Abstract
Introduction: A deleterious effect of atypical D2 antagonists (ArD2) on executive functions has been linked for approximately twenty years. Until 2014, a negative effect on attention, memory and motor control, and attention deficits related to D2 receptor occupancy had been attributed. However, this concept has changed with the increasing use of Risperidone, to which cognitive improvement has been attributed in patients with schizophrenia.
Objective: The aim of this work is to identify the effect of atypical D2 antagonists on executive function in patients over 65 years of age.
Methods: A review was made of scientific articles found between January 2015 and September 2022 in the SCOPUS, PUBMED and EMBASE databases related to the effect of ArD2 on executive functions.
Conclusions: Presynaptic 5HT1A receptors are key in the therapeutic effect of quetiapine against cognitive impairment associated with atypical antipsychotics. Protein kinase A in hippocampal cells is involved in the mechanism of the effect of quetiapine on cognitive impairment associated with atypical antipsychotics. PKA activity is increased in the hippocampus because quetiapine directly upregulates presynaptic 5-HT1A receptors in the raphe nucleus. SGA-LAI improved neurocognitive function, similarly risperidone may improve executive and social cognitive function. Olanzapine may be more beneficial in patients with high deficit basal executive function impairment.
Keywords: Atypical D2 antagonists, cognitive impairment, executive function.

Effect of selective serotonin reuptake inhibitors (SSRIS) on executive functioning in the population over 65 years of age, without psychotic mental disorder

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Abstract
Introduction: Executive Function deficits are associated with major depressive disorder (MDD) and obsessive-compulsive disorder (OCD), however, the improvement attributable to selective serotonin reuptake inhibitors (SSRIs) in the geriatric population has yielded mixed results.
Objective: To identify the effect (SSRI) on executive function (EF) in patients over 65 years of age without a diagnosis of psychiatric pathology with psychotic features
Methods: A review of articles have found between January 2015 and September 2022 in the SCOPUS, PUBMED and EMBASE databases related to the effect of SSRIs on executive functions was carried out. Studies using other groups of antidepressants and if SSRIs were used as adjunctive treatment of other pathologies were excluded.
Conclusions: Alterations in 5-HT2A receptor expression possibly contribute to executive dysfunctions such as self-control and appropriate goal-directed behavior. However, it is unclear why patients with executive dysfunction in poor planning and organizational skills tend to have an unsatisfactory response despite antidepressant medication. Nevertheless, when there is a positive response to SSRIs in MDD, EF improves. In the case of OCD, the use of SSRIs improved planning. SSRIs have a relatively weak cognitive basis with regard to verbal fluency, visual memory and psychomotor skills.
Keywords: Antidepressants, Cognition, Executive Functions, Serotonin.

Clinical and Functional Correlation between Posttraumatic Stress Disorder and Neurocognitive Deficits

Zúñiga-Velásquez, A. [1]; Arroyave-Ríos, M. F. [1]; Hurtado-González, C. A. [1,2,3,4]; Ortega-Bolaños, L. [4]; Lenis-Gutiérrez, P. A. [2,4]; Marmolejo-Escobar, C. S. [4]; Ospina-Otalvaro, S. [4]; Ayala-Rico, J. F. [4]; Lucumi, A. [3]; Hernández-Librado, D. C. [1]; Ortiz-Agudelo, M. I. [6]

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Abstract
Introduction: PTSD is characterized by a constellation of symptoms that appear after exposure to one or more traumatic events. Although the DSM - V diagnostic criteria mainly establish psychiatric alterations, it has been found that they can also develop NCD associated with alterations in frontal parietal and limbic control networks.
Objective: To identify neurocognitive deficits (NCD) in patients diagnosed with Post Traumatic Stress Disorder (PTSD).
Methods: A review of the scientific literature was conducted using databases such as PUBMED and Scopus by entering the keywords "PTSD", Post-traumatic Stress Disorder, Neurocognitive, Memory, Cognitive, Executive Function. Experimental articles with significant samples, meeting the criteria of being written in English and Spanish and published between 2016 and 2022 were selected. A total of 3,049 articles were found, 3,043 were excluded and 6 were selected, 3 were randomized controlled trials and 3 were cohort studies where participants were given a battery of neuropsychological tests.
Results: It was found that subjects with PTSD presented NCD predominantly in the domains of Memory, Cognitive, Executive Function and decreased motor response, and that the severity of the alterations was inversely proportional to the response to treatment. One of the studies describes structural alterations in brain MRI and correlates cortical thickness in the anterior cingulate gyrus and prefrontal cortex with EF performance.
Conclusions: Patients with PTSD present alterations in sustained attention, working memory, executive functions (planning, inhibition, conceptualization and decision making), it is necessary to carry out functional neurorehabilitation proposals aimed at slowing down this deterioration, and failing that, dementia and/or post-traumatic encephalopathy.
Keywords: Neurocognitive deficit, posttraumatic stress disorder, executive functions, sustained attention, verbal memory.

Perspectives Towards the Future: Video Games and Functional Neurorehabilitation. Non-Pharmacological Therapeutic Option for the Improvement of Quality of Life

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Abstract
Introduction: Functional Neurorehabilitation (FN) is a care process that aims to generate intrinsic plasticity in the nervous system, with the objective of minimizing the functional deficits caused by lesions in the nervous system. To achieve this goal, technological innovations, including Videos Games (VDG), have been found to be useful.
Objective: To identify the influence of VDG on functional neurorehabilitation processes.
Methods: A search was performed in scientific databases such as PUBMED, Scopus, and LILACS, using the keywords Videogames, Virtual Reality and Functional Neurorehabilitation; 408 articles were obtained, the 6 most relevant articles were chosen that met the criteria of being experimental or quasi-experimental, that were written in English or Spanish and were published between 2016 and 2022, in which VDG and virtual reality were applied to FN.
Results: We found that FN with video games in participants diagnosed with multiple sclerosis (MS), cerebrovascular accident (CVA) and Parkinson's disease (PD) showed benefits in their neural plasticity. In PD, there was evidence of improvement mainly in tremor and gait balance. In MS, no difference was found between conventional FN and FN with VDG, but there was a better response with the joint use of both therapies. Post-CVA participants had

compensation of motor deficits, suggesting greater response when compared to conventional FN.
Conclusions: VDG is presented as a non-pharmacological option that benefits neural plasticity or cognitive reserve in patients diagnosed with neurodegenerative pathologies.
Keywords: Functional deficits, Functional neurorehabilitation, Virtual reality, Video games.