Introduction: Tourette's syndrome (TS) is a disorder characterized by repetitive, involuntary movements, and vocalizations known as tics. While there are existing treatment options, there is a growing need for novel pharmacological approaches to manage the symptoms of TS effectively. This study delves into the emerging field of using cannabinoids as a potential treatment for Tourette's syndrome.
Objectives: The primary objectives of this review are to examine the current evidence base for the use of cannabinoids in the treatment of Tourette's syndrome, to assess the biological rationale supporting the use of cannabinoids in managing tic severity, to provide insights into the results of existing clinical trials involving cannabinoids and Tourette's syndrome, and to draw conclusions regarding the potential efficacy and safety of cannabinoid-based treatments for TS.
Methods: Narrative review of the available scientific literature.
Results: There is a strong biological rationale for how cannabinoids could impact tic severity. The endocannabinoid system plays a crucial role in regulating various physiological processes, including motor control and neurotransmitter release. Activation of cannabinoid receptors in the brain may modulate these processes, potentially reducing tics. While limited, two small randomized, placebo-controlled trials of THC have been conducted in TS patients. These trials suggested potential benefits of cannabis-derived agents in reducing tic frequency and severity. Self-report and examiner rating scales demonstrated significant improvements in tic symptoms. The trials indicated that THC treatment did not result in significant adverse effects in TS patients.
Conclusions: The exploration of cannabinoids as a treatment option for Tourette's syndrome is promising but requires further investigation. The biological mechanisms through which cannabinoids may affect tic severity in TS are sound, suggesting their potential as a therapeutic option. Existing trials with THC have shown encouraging results, demonstrating a reduction in tics without significant adverse effects. However, the limited number of trials warrants caution in drawing definitive conclusions. Despite the promising findings, the overall efficacy and safety of cannabinoid-based treatments remain largely unknown. Further trials are essential to address dosing, active ingredients, optimal administration, and potential long-term effects. Clinical use should be approached with caution. While early evidence is encouraging, additional rigorous studies are needed to establish the safety and efficacy of cannabinoid-based treatments for this disorder.

Disclosure of Interest: None Declared

EPV0641

Investigating Epigenetic and Neuroimaging Profiles in Bipolar Disorder and Behavioral Variant Frontotemporal Dementia: An integrated epigenetic-neuroimaging approach

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Introduction: Discriminating between bipolar disorder (BD) and behavioral variant Frontotemporal Dementia (bvFTD) is a clinical challenge as it is still based on clinical judgement, which often leads to misdiagnosis. This challenge is particularly pronounced in cases involving the *C9orf72* hexanucleotide expansion, a genetic factor responsible for a substantial portion of familial FTD cases, as in these patients the development of late psychoses is particularly frequent. Moreover, individuals with *C9orf72* bvFTD are also characterized by behavioral changes that resemble those seen in late-life BD, especially during the early stages of the disease. This raises questions about whether the clinical similarities between BD and bvFTD are rooted in specific alterations within the brain networks involved in cognitive processing or in selective genetic and epigenetic mutations. In light of this, our recently published neuroimaging study has shed light on the presence of distinctive structural and metabolic characteristics in elderly individuals with BD and bvFTD. These findings offer valuable neurobiological insights that may lead to differentiate between bvFTD and elderly BD patients.
Objectives: Building on our previous research, this study further explores the existence of similar epigenetic expression patterns in plasma neural derived extra cellular vesicles (NDEs), such as miRNA and lncRNA, and seeks to correlate these epigenetic data with shared or distinct biological markers obtained through structural Magnetic Resonance Imaging and [18F]-fluorodeoxyglucose (FDG)-Positron Emission Tomography (PET).
Methods: We will plan to conduct statistical analyses on epigenetic and neuroimaging data on *C9orf72* and sporadic bvFTD as well as on late-and early-onset BD patients and on healthy controls. Additionally, A PET study will be also performed on a subpopulation of these patients.
Results: Our hypothesis posits that selective epigenetic modifications may impact the brain's structure and function, in a way that can change the glutamatergic neurotransmission in prefrontal regions, with subsequent indirect effects on subcortical areas.
Conclusions: Our findings will not only help identifying the specific biological signatures of BD and bvFTD, which might have important implications not only in prevention but also in differential diagnosis and treatment, but also offer insights into potential targets for slowing the onset and progression of the structural alterations characterizing these disorders.

Disclosure of Interest: None Declared

EPV0642

Gut Microorganisms, Neuroinflammation and Behavioral Changes

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Introduction: Recent clinical and preclinical evidences suggested that neuroinflammation is a key factor which interacts with the neurobiological correlates of major depressive disorder, which are the (i) dysregulation of the hypothalamic-pituitary-adrenal axis, (ii) depletion of brain serotonin and (iii) alteration of neurogenesis in the dentate gyrus of the hippocampus.

The gut bacterial has major impact on the brain development, behaviour and host immune system through the microbiota-gut-brain axis.
Objectives: The objective of the research is to establish the role inflammation induced by gut dysbiosis plays in behavioural changes of patients suffering from major depressive disorders.
Methods: Clinical data and preclinical experiments were used to elucidate the role gastrointestinal bacterial play in the development and functional physiology of the nervous system and because of the bidirectional communication between the enteric nervous system in the gut and the central nervous system, through the vagal plexus, blood circulation and endocrine system; it was discovered that the appropriate population of intestinal microbiota affect the immunological state of the brain.
Results: The intestinal microbiota has been able to maintain the attenuation and regulation of pro-inflammatory biomarkers in the brain and such had assisted in the healthy state of the brain; however, a disruption of gastrointestinal organisms in a condition called dysbiosis could result in breakdown of protective gastrointestinal mucosa barrier resulting in leaky gut and consequently, the permeability of the gut lining and migration of some bacteria, to the brain through the vagal networks and other channels.
These pathophysiological cascades appear to be triggered or sustained and reinforced by chronic inflammatory condition involving increased circulating markers of inflammation, which are able to cross the blood brain barrier to activate the microglia.
Conclusions: Studies in depression suggest that inflammatory biomarkers such as C-reactive protein can be used to enrich samples for anti-inflammatory clinical trials for depression that target inflammation-related symptoms such as anhedonia and anxiety.
Although, still at the developmental stages, imaging of neuroinflammation will help establish a target in the brain to further facilitate the testing of anti-inflammatory therapies for depression.

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EPV0643

Dynamics of neurocognitive impairments in patients with chronic alcoholism of the second stage

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Introduction: Neuropsychological disorders in patients with alcoholism intensively studied since the mid-70s of the last century. Research in this area divided into three groups: the study of premorbid neuropsychological features of alcohol dependence; study of neuropsychological disorders of chronic alcohol use; study of the prognostic value of neuropsychological disorders in patients suffering from alcohol dependence. In domestic neuropsychology, is the necessary information about the neuropsychological characteristics of patients suffering from alcohol dependence, neuropsychological manifestations in cognitive processes.
Objectives: to identify neuropsychological features of patients suffering from alcohol dependence with a diagnosis of stage 2 alcoholic disease
Methods: A neuropsychological examination was carried out according to the method of A.R. Luria of 39 patients aged 29 to 68 years with a diagnosis of stage 2 alcoholic disease. The group of patients is divided into 3 subgroups of alcohol abuse: up to 10 years, 10-20 years; more than 20 years.
Results: Disorders of higher mental functions identified in all subgroups. In chronic alcoholic encephalopathy, there is a tendency to increase cognitive deficits. According to the results of the neuropsychological examination, it was found that the greatest disorders in patients of the first subgroup occur in the implementation of successive processes (memory, thinking), arbitrary regulation of activity, and also relate to the regulatory aspects of memory, attention, thinking and speech.
In patients of the second subgroup, the most numerous in this sample, violations of visual object gnosis were revealed, as well as a violation of the synthesis of information necessary to endow the image of the object with a certain meaning In patients of the third subgroup, pronounced disorders inherent in the first and second subgroups were found, as well as distortions in the identification of emotions, that is, the inability to compare emotional objects with an emotional standard, which indicates signs affective-cognitive deficit in alcoholic disease of the second stage.
Conclusions: In the study, the dynamics of neuropsychological disorders in patients with alcohol disease of the second stage, depending on the experience of alcohol abuse, found

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EPV0645

Embodied cognition and urban design: Thoughts through epigenetic advances

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Introduction: In the history of urban planning, the cognitive trend has been a well-established entity since the work of the American urban planner during the mid-'90s; Kevin Lynch. However, for a long time, urban planning has been deprived of the contribution of scientific knowledge from cognitive neurosciences, with a lack of operational recommendations for urban projects.
Objectives: This study aims to reveal the role of embodiment theories in the revolution of urban design and urban projects through emerging findings in epigenetics and post-genomic biology.
Methods: We conducted an exhaustive review of the scientific literature to establish the relationship between embodied cognition and urban design through advances in epigenetics as well as potential applications of such finding. Our inquiry was to find out whether there was a scientific way to measure and quantify the performance of urban spaces.
Results: Our review revealed that, epigenetics and epigenomics have provided new explanations and perspectives to certain debates on the theory of embodied cognition and that of enaction. Epigenetic marks constitute a bodily memory that enables cognition to

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