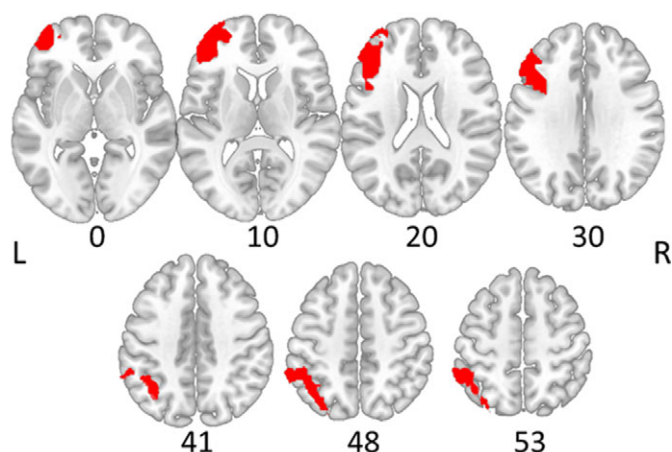


Image:

Lateral components of the fronto-parietal network according to Yeo functional connectivity atlas

Top: lateral prefrontal

Bottom: inferior parietal

Conclusions: The findings suggest that the structural connectivity disruptions of the SLFP may mediate FC strength within the FPN in patients with persistent delusions. However the limited sample size and the lack of correlations between connectivity measures and clinical scores do not allow to conclude definitely whether the revealed structural-functional connectivity pattern underlies delusional symptoms, which should be elucidated via further research. *This study was supported by RFBR grant 21-515-12007*

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EPV0613

Structural brain MRI studies in autism spectrum disorder

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Introduction: Autism spectrum disorder (ASD) refers to a group of conditions characterized by quantitative differences in the morphology of the cortex and subcortex. Analyzing brain morphology qualitatively provides complementary information about possible underlying neurobiology. Studies of neuroradiological findings in ASD have produced mixed results in a large and independent sample.

Objectives: A small cerebellum associated with pons hypoplasia, or a posterior fossa cyst, may indicate causal developmental mechanisms. Therefore, neuroradiological findings could help elucidate the neurodevelopmental processes associated with ASD.

MRI “minor abnormalities” also included dilatation of the Virchow-Robin gaps, an enlarged cisterna magna, pineal gland cysts, and arachnid or choroidal cysts not included in specified categories.

Methods: There were anomalies in the corpus callosum (hypoplasia), cerebellum, brain stem, abnormal white matter signal intensity, macrocephaly, ventriculomegaly, abnormal myelination patterns, ventricular system size, Arnold Chiari I malformation, cortical dysplasia and atrophy, hippocampal malformations, and pituitary glands. These anomalies were referred to as “major abnormal findings”.

Results: The most common minor abnormality is the mega cisterna magna. Some authors propose a minor abnormality such as this as a marker for brain dysgenesis. According to Zimmer and colleagues, enlargements of the cisterna magna are generally accompanied by cerebellar hypoplasia and ventriculomegaly, as well as lower performance on speech tasks (verbal and semantic fluency) common among individuals with autism spectrum disorders. The relationship between the presence of mega cisterna magna and language difficulties could be studied further in a subsequent study. Abnormal dilation of the cisterna magna is thought to be related to alterations in the cerebellar volumes.

Conclusions: Clinical MRI assessments may be helpful in the context of diagnoses and are potentially valuable for further studies of the pathogenesis of autism. The potential utility of routine brain MRI is in discovering early morphologic biomarkers for ASD.

Disclosure of Interest: None Declared

EPV0615

Brain Reward System And Its Volumetric Investigations In Alcohol Addiction

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Introduction: Alcohol use disorder (AUD) is a diagnosis that includes both addiction and abuse concepts that entered our lives with the DSM-5. The prevalence of AUD is 8.1% in men and 1.7% in women in Türkiye, and it is getting more and more common. Biopsychosocial factors play a role in the etiology of AUD.

Objectives: The brain reward system, which includes many cortical and subcortical structures, plays an active role in the initiation and maintenance of alcohol dependence. In this study, we aimed to reveal the structural changes in alcohol dependence.

Methods: 15 cases with AUD and 17 healthy controls were compared in terms of total white matter, total gray matter, nucleus accumbens, amygdala and hippocampus volumes. AUDIT, MAST and alcohol addiction severity scale were administered to all participants. Magnetic resonance imaging of all participants was performed. Then, the relevant regions were painted cross-sectionally and volume measurements were made. The case group was evaluated for the diagnosis of AUD with SCID-V. Volume averages were evaluated with Student’s t test. ANCOVA was used to remove confounding factors and re-evaluate the difference between volumes.

Results: Although there were differences between volumes in the first analyzes with Student's t test, they were not statistically significant.

Age and gender variables, which were determined by the literature to have an effect on volume measurements, were re-evaluated with the ANCOVA test. When the effects of age and gender variables were removed in the evaluation, the right hippocampus volume was found to be significantly reduced in the AUD group compared to the control group ($F=5.26$, $p=0.03$). Again, no significant difference was observed in the two groups in terms of areas other than the volume of the right hippocampus. Pearson correlation analysis was used to evaluate the relationship between scale scores, duration of alcohol use and amount taken, and volumetric measurements, but no statistically significant relationship was found.

Conclusions: Different findings have been reported in the literature regarding the examined region volumes. Our study found volumetric changes consistent with most previous studies. For more generalizable results, studies with a large number of participants are needed.

Disclosure of Interest: None Declared

EPV0616

Heavy and Chronic Cannabis Use Impact on Human Emotions: BOLD-fMRI Study

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Introduction: Long term cannabis use has been expanding drastically over the last two decades and has become a major health issue worldwide. Recent studies demonstrate that brain complications in adults with cannabis use are associated with cognitive and emotional impairments, but little is known about the relationship between structural alterations and behavioral manifestations. Therefore, studying the relationship between alterations of emotional system, in parallel with structural degenerative phenomena is very critical.

Objectives: Hence, the aim of this study is to demonstrate such alterations by making use of appropriate paradigms during BOLD-fMRI scans. Positive, negative and neutral emotions were examined, in relations with DTI and functional connectivity.

Methods: 11 cannabis addicted patients volunteered for the study. Volunteers were fully healthy. However, any additional comorbidity was a strict criterion of exclusion, and a healthy general state was an indispensable criterion of inclusion. Additionally, it was excluded any patient that have any additional substance use such as tobacco, alcohol, cocaine, etc. And strict use of cannabis was a must.

All patients underwent blood and urine assessments to ensure the selection criteria.

All patients underwent BOLD-fMRI and anatomical MRI using both motor and emotional paradigm.

The motor task consisted of rest alternating with finger tapping. The emotional task included 3 conditions. Positive, neutral and negative were each alternating with silent mental counting. The

fMRI data was processed using SPM12 package. A sample of 12 age-matched controls was also included.

Results: The present results are based on analysis of behavioral and BOLD-fMRI data of 11 patients and similar age-matched controls. Analysis of behavioral data showed an alteration of emotional abilities in cannabis addicted patients compared to controls. Analysis of fMRI data revealed significant changes of activation within a large cortical network including prefrontal cortex and parietal cortex, and that emotional responses and BOLD signal were inversely correlated.

Conclusions: These findings demonstrate that the brain of cannabis addicted patients undergoes and emotional alterations that parallel silent structural degenerative phenomena. Although the causal mechanisms are still to be investigated, the fact that functional impairments can be detected in emotional, cognitive and motor domains calls for the development of preventive measures using neurobehavioral tools for this population of patient, and even in at risk users.

Disclosure of Interest: None Declared

Neuroscience in Psychiatry

EPV0617

Cognitive functions in people with mental disorders: focus on self-reflection, insight and mindwandering

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Introduction: People with mental disorders may present impairments in cognitive and metacognitive functions. Self-reflection is the ability to reflect on oneself (specifically on one's behavior, emotions, and thoughts) and insight is the awareness of one's internal experience. Mindwandering (MW) is defined as the tendency to divert attention from current reality without a clearly defined intention. It can be spontaneous or deliberate. Several studies have investigated these alterations in patients with schizophrenia (SZ), while less is known for people with substance use disorder (SUD).

Objectives: The aim of the present study was to explore self-reflection, insight and MW in a group of patients with SZ and SUD.

Methods: The Self-reflection and Insight Scale (SRIS) and the spontaneous (MW-S) and deliberate (MW-D) mindwandering scales were administered to 25 patients with SZ, 21 patients with SUD, and 21 healthy controls (HC). Linear regressions were performed to evaluate the associations between the variables under study.