Results: Eight studies met eligibility criteria and were analysed for reported changes in outcome measures used to assess the symptoms of psychiatric illness and the tolerability of treatment. All Major Depressive Disorder (MDD) (n=5) and Generalized Anxiety Disorder (GAD) (n=1) studies found adjuvant probiotic or synbiotic treatment to be more efficacious in improving the symptoms of psychiatric illness than the first-line treatment alone or with placebo. The schizophrenia studies (n=2) found adjuvant probiotic treatment to have no significant difference in clinical outcomes, but it was found to improve the tolerability of first-line antipsychotics.
Conclusions: The findings of the studies included in this review suggest the use of adjuvant probiotic treatment with selective serotonin reuptake inhibitors (SSRIs) for MDD and GAD to be superior to SSRI treatment alone. Probiotic adjuvant treatment with antipsychotics could be beneficial for improving the tolerability of the antipsychotics, but these findings do not suggest that adjuvant probiotic treatment would result in improved clinical outcomes for symptoms of schizophrenia.

Disclosure of Interest: None Declared

EPP0230

Vocal music and brain plasticity_a literature review

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Introduction: Vocal music has been a way for the expression of beautiful human emotions and gives a consolidated framework to words. Our review is centered on finding neuroplastic changes in exposure to music.
Objectives: Our main Objective is to identify structural brain changes in different brain areas. Identification of motor and sensory changes that are produced in response to vocal music.
Methods: Detailed literature review was conducted using Pubmed and Google Scholar databases. The literature search was narrowed down to cover the research topic with the search terms [plasticity] OR [brain] OR [neurons] OR [music] OR [vocal]. Our Inclusion criteria included studies with effects of vocal music on neuronal plasticity regardless of age, gender, duration of training, type of training, medium of lanuage and profession. Exclusion criteria included instrumental music and forms of music other than vocal music.
Results: Results showed that music impacts areas of the brain that are highly associated with human emotions. Any brain area can undergo neuroplasticity but is most commonly seen in the insular areas, paracortex, putamen, amygdala, and white matter. Music therapy promotes the formation of instant neural networks and the release of neurotransmitters like serotonin and dopamine. These microscopic changes increase depending on the duration of exposure to vocal music. Later, it appears as macroscopic changes visible with the help of neuroimaging. There is also a significant difference in the brain changes of vocalists and non vocalists. Vocal music impacts the left side of the cortex. Music activates reward system in the brain that leads to stimulation of dopaminergic pathways. It helps in neuronal division in post strock and post traumatic brain injury patients.
Conclusions: Music therapy is widely used as the rehabilitative process that combines music with therapeutic medications to promote therapeutic alliance and better results. It is used to direct focus toward the fulfillment of the emotional and cognitive needs of patients with psychiatric ailments. This area is needed to be explored more so that vocal music can be used for integrated therapy.
Keywords: Vocal music; Brain changes; neuroplasticity; therapy.

Disclosure of Interest: None Declared

EPP0231

Psychiatric Manifestations of Iron Deficiency Anemia-A Literature Review

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Introduction: Anemia due to iron deficiency is a highly prevalent medical condition in women and children. Iron deficiency presents with fatigue, low mood, anxiety, restlessness, palpitations, and headache. Poor nutritional intake can be the reason of iron deficiency in underprivileged populations. It can lead to behavioral symptoms that can manifest as chronic psychiatric ailments.
Objectives: Our objective is to consolidate manifestations of iron deficiency anemia concerning psychiatric ailments. We will figure out if it impacts the severity of psychiatric symptoms. We aim to find out if there are any underlying factors that impact the correlation of iron deficiency with psychiatric disorders like depression, anxiety, sleep disorders, and restless leg syndrome.
Methods: Detailed literature review conducted using PUBMED, OVID, GOOGLE SCHOLAR with the search terminologies [iron] OR [sleep disorders] OR [depression] OR[deficiency] OR [anxiety] OR [ADHD] OR [VITAMINS] OR[PICA] OR [CHILDREN] OR [women] OR [antidepressants] OR [sleep medicine] OR [antipsychotics] that yielded 150 results that were narrowed down to be focused on our research area. Inclusion criteria included studies with participants with iron deficiency anemia regardless of age group, gender, economic and social background. Exclusion criteria included patients with normal hemoglobin levels.
Results: Results yielded a positive impact of treating iron deficiency anemia in patients with psychiatric ailments. The symptoms of low mood, fatigue, anxiety, anhedonia, and sleeplessness get better as iron deficiency improves. According to the search, some physicians misdiagnose iron deficiency as depression. Antidepressants were found to be working better when added with iron supplements. Restlessness and palpitations can also be the manifestations of iron deficiency. Patients with underlying iron deficiency are more predisposed to developing psychiatric disorders. According to published data, restless leg syndrome was found to be associated with iron deficiency. Some psychiatric drugs can lead to iron deficiency and can provoke underlying iron deficiency even more. Iron deficiency impacts memory areas of the brain like the hippocampus and prefrontal cortex.

Conclusions: It is much needed more than ever before that proper consideration to the diagnosis of iron deficiency anemia must be given with the assistance of predesigned guidelines. Misdiagnosis of iron deficiency anemia as a psychiatric disorder can be misleading toward the insidious usage of psychiatric medications. Proper attention must be provided to this neglected area so that management of iron deficiency is tailored in the right direction and it is diagnosed at less severe stages. It will be helpful for general physicians and practicing psychiatrists in the field.

Keywords: Iron deficiency, Psychiatric Disorders, Anxiety, depression.

Disclosure of Interest: None Declared

Psychoneuroimmunology

EPP0232

Assessment of serum high mobility group box 1 protein (HMGB1) levels and its change with treatment in patients with manic episode of bipolar disorder

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Introduction: There has been an increasing evidence in recent years that inflammation plays a role in the pathophysiology of bipolar disorder (BD). In addition to central inflammation, systemic immune response is thought to be associated with disease stages and course. HMGB1 protein is a member of damage-associated molecular pattern which plays a role in the regulation of cytokine release and is important for innate immunity. It has been revealed that HMGB1 levels change in many autoimmun and inflammatory diseases

Objectives: Our study was designed to compare serum HMGB1 levels of inpatients with mania and healthy controls as well as analyzing its relationship with other inflammatory markers and disease severity. Another aim of our study is to determine the changes in serum HMGB1 levels before and after treatment in manic patients.

Methods: Our study included 35 patients who were hospitalized in our hospital between November 2020 and April 2021, diagnosed with bipolar disorder, manic episode according to DSM-5 criteria, and 35 healthy controls who matched to the patient group in terms of age and gender. The sociodemographic and clinical characteristics data forms of the participants were filled in, and the patients were evaluated with the Young-Mania Rating Scale (YMRS) and the Hamilton Depression Scale (HAM-D). Serum HMGB1, CRP levels and complete blood count values were measured in healthy controls and patients before and after the treatment.

Results: The main finding of our study is that HMGB1 levels did not show a statistically significant difference in the patient and healthy control groups ($p>0.05$). In addition, there was no significant change in serum HMGB1 levels of the patients after treatment compared to the level before treatment ($p>0.05$). Our study has also revealed that manic patients had a higher level of CRP than the ones in control group at a statistically significant level. The platelet/lymphocyte and neutrophil/lymphocyte rates of the patients increased after the treatment compared to the pre-treatment period (respectively p=0,026, p=0,003).

Conclusions: The higher CRP levels in manic patients support the hypothesis of low-grade chronic inflammation, which is thought to be involved in the etiology of BD. The most important finding of this study is that there is no statistically significant difference of serum HMGB1 levels between the two groups. This can be explained by the fact that HMBG1 is one of the late mediators of inflammation and does not rise immediately during the acute period. However, since the inflammation process includes complex mechanisms involving many systems, it makes it difficult to comment on this issue.

Disclosure of Interest: None Declared

EPP0233

Choroid plexus volume as a proxy of neuroinflammation in depression

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Introduction: Choroid plexus (CP) is a physiological barrier, producing cerebrospinal fluid (CSF), neurotrophic, and inflammatory factors. It's also involved in the neuro-immune axis, facilitating the interplay between central and peripheral inflammation, allowing trafficking of immune cells. Coherently, CP enlargement has been found in psychiatric diseases characterized by inflammatory signature. Although CP volume correlates with central microglia activation in major depressive disorder (MDD), it's never been directly associated with peripheral markers in mood disorders.

Objectives: Examine CP volume in mood disorders and healthy controls (HC) in relation to clinical features and peripheral inflammatory markers.

Methods: CP volume was extracted with FreeSurfer in 72 HC and 152 age- and sex-matched depressed patients: 79 BD and 73 MDD. Plasma analytes in patients were collected through immunoassay technology (Bioplex). We tested for the effect of age by group on CP volume. Then we focused on the interaction between illness duration and diagnosis in predicting CP volume. After testing the effect of specific analytes by diagnosis, we calculated moderated moderation models (SPSS, PROCESS) setting each analyte as independent variable, CP volume as predicted variable and illness duration and diagnosis as moderators. We get the effects' significance with the likelihood ratio statistic, always controlling for age, sex, and intracranial volume.

Results: Patients were comparable in illness duration and severity. CP volume is differentially distributed through groups (right: $p=0.04$; left: $p<0.01$), with higher volumes in the clinical groups. Age by group significantly predict right CP volume ($p=0.01$). Also, duration of illness differently predicts right CP volume in MDD and BD ($p=0.03$) (Figure1). Then, given the significant interaction effect of IL13 ($p=0.02$) and IL1ra ($p=0.01$) in predicting right CP, we run the moderated moderation model. Longer illness duration has an effect in strengthening the opposite predicting value of IL1ra ($\Delta R^2=0.03$, $p<0.01$) on right CP volume in MDD and BD (Figure2).