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Aims: Bipolar disorder (BD) is a severe psychiatric illness characterized by alternating depressive and manic episodes. The exact cause of BD remains unclear, but inflammatory and immunological processes are believed to play a significant role in its pathophysiology. Immune system dysregulation is a key factor, with pro-inflammatory markers like CRP, TNF-α, and IL-6 being elevated during mood episodes. Interleukin 27 (IL-27), which has both pro-inflammatory and anti-inflammatory properties, has not been extensively studied in BD. This study aims to investigate the levels of IL-27 and its subunit EBI3 in BD patients to better understand their role in the disease.

Methods: A cross-sectional study was conducted at Panj-Azar Hospital in Gorgan, Iran, from March 2023 to August 2023. The study included 75 patients with bipolar disorder (depression, mania) and 30 healthy controls. Participants were aged 18–65, diagnosed with bipolar disorder by two psychiatrists using DSM–V criteria, and undergoing treatment with atypical antipsychotics. Exclusion criteria included other psychiatric illnesses, substance use disorder, corticosteroid use, autoimmune/inflammatory diseases, pregnancy/breastfeeding, chronic schizophrenia, and other mental diseases. Blood samples were collected and stored at −80°C, and serum levels of IL-27 and EBI3 were measured using high-sensitivity ELISA kits. Descriptive and inferential statistics were applied to analyse the data, including normality tests, one-sample t-tests, independent t-tests, and Pearson correlation. The study followed the STROBE checklist to ensure high-quality reporting of observational studies.

Ethical consideration: This study was conducted after obtaining ethical approval (IR.GOUMS.REC.1400.010) from the Golestan University of Medical Sciences. Written and oral informed consent was obtained from patients

Results: The study revealed significant changes in the immune system of bipolar disorder (BD) patients, with IL-27 levels showing a notable difference between BD and control groups (p≤0.05). IL-27, which has dual roles in inflammatory reactions, correlated positively with ALP (p=0.05, r=−0.22), FT4 (p=0.01, r=−0.29), and CPK (p=0.03, r=−0.24), and negatively with disease duration (p=0.03, r=−0.26), suggesting its potential as a therapeutic target. EBI3 did not show significant correlations with any variables (p≥0.05).

Conclusion: This study highlights the significant role of immune system dysregulation in bipolar disorder (BD), particularly the elevated levels of IL-27 in BD patients compared with controls. The correlations between IL-27 and various clinical parameters suggest its potential as a biomarker and therapeutic target. Although EBI3 did not show significant correlations, the findings underscore the importance of inflammatory and immune markers in understanding BD's pathophysiology. Further research is needed to confirm these results and explore the underlying mechanisms, which could lead to the development of new diagnostic and treatment strategies for BD

Prevalence of Menstrual Irregularities in Psychiatric Patients and Its Impact on Treatment Adherence: A Cross-Sectional Study

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Aims: Menstrual irregularities (MI) are a frequently overlooked yet clinically significant concern among women with psychiatric disorders. Several psychiatric conditions, particularly schizophrenia and bipolar disorder, involve dopaminergic dysregulation, which may contribute to hormonal disturbances. Antipsychotic medications, especially typical antipsychotics, are known to impact menstrual cycles through their effects on dopamine pathways, leading to hyperprolactinemia and subsequent menstrual dysfunction. However, research on the prevalence of MI and its relationship with psychiatric illness and treatment adherence remains limited, particularly in the Indian context. This study aims to assess the prevalence of MI among female psychiatric inpatients and explore its association with socio-clinical factors, antipsychotic medication use, and treatment adherence.

Methods: A cross-sectional study was conducted at a tertiary care mental health institute, recruiting 100 female inpatients diagnosed with psychiatric disorders. MI was defined as any deviation from a regular menstrual cycle, including oligomenorrhea, amenorrhea, or irregular bleeding. Menstrual distress was assessed using the MEDI-Q (Menstrual Distress Questionnaire) scale, while treatment adherence was evaluated with the Brief Adherence Rating Scale (BARS). Statistical analysis examined associations between MI, antipsychotic use, prolactin levels, psychiatric diagnosis, and treatment adherence.

Results: The mean age of participants was 36.5 years, with an average illness duration of 3.6 years. Psychiatric diagnoses included psychotic disorders (62%), bipolar disorder (22%), depressive disorder (10%), and neurotic disorders (6%). Antipsychotic medication use was recorded in 82% of participants. The overall prevalence of MI was 37%. Among patients with psychotic disorders, 50% exhibited MI, with a significantly higher prevalence in those on typical antipsychotics (80.7%) compared with atypical antipsychotics (27.7%). MI was also observed in 31.5% of bipolar patients on atypical antipsychotics. Patients with poor treatment adherence (<50% on BARS – Brief Adherence Rating Scale) showed significantly higher score for MEDI-Q Total Score (16.51 ± 12.99 vs. 10.86 ± 12.36; p < 0.01) as well as for the subscales MSD (Menstrual Symptom Distress) and MESI (Menstrual Specificity Index). The menstrual distress was associated to being on antipsychotics; in fact, MEDI-Q Total Score was significantly higher in women on antipsychotics as compared with those not on antipsychotics.

Conclusion: Menstrual irregularities are prevalent among female psychiatric inpatients, particularly those with psychotic disorders and those on typical antipsychotics. These disturbances negatively impact medication adherence, highlighting the need for routine menstrual health assessments, prolactin monitoring, and personalized treatment approaches to balance psychiatric stability with reproductive health. Addressing patient concerns regarding menstrual side effects may improve adherence and overall treatment outcomes.