

THE ASSOCIATION BETWEEN HEMATOLOGICAL INFLAMMATORY MARKERS AND CLINICAL DIAGNOSES AND DISEASE CHARACTERISTICS IN INPATIENTS AT THE PSYCHIATRY DEPARTMENT OF AYDIN ADNAN MENDERES UNIVERSITY HOSPITAL

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BACKGROUND AND AIM: Low-grade systemic inflammation has been implicated in major psychiatric disorders. Hematological inflammatory markers derived from routine complete blood count (CBC) parameters provide accessible indices of inflammatory burden. We aimed to compare NLR (neutrophil-to-lymphocyte ratio), MLR (monocyte-to-lymphocyte ratio), PLR (platelet-to-lymphocyte ratio), SII (platelet $\times$ neutrophil/lymphocyte), and SIRI (neutrophil $\times$ monocyte/lymphocyte) across primary diagnostic categories in psychiatric inpatients hospitalized over one year. In the absence of a contemporaneous healthy control group, we evaluated the prevalence of values above published population-based upper reference thresholds (97.5th percentile).

METHODS: This retrospective observational study included all adult patients hospitalized in a university psychiatry clinic between January 1 and December 31, 2025, classified by primary discharge diagnosis. Admission CBC results obtained within the first 24 hours were analyzed. Patients with active infection, autoimmune disease, malignancy, acute inflammatory conditions, or systemic corticosteroid use were excluded where documented in records. Diagnostic-group comparisons were performed using Kruskal–Wallis tests. Ethics Committee Protocol Number: 2026/45. As a limitation of routine retrospective data, comorbidities, medication exposure, illness duration, and

standardized symptom severity measures were not uniformly documented and were therefore not analyzed.

RESULTS: A total of 423 patients were included: major depressive disorder 29.8%, bipolar disorder manic episode 18.2%, bipolar depressive episode 11.8%, psychotic disorders 11.6%, anxiety disorders 10.6%, substance use disorder 7.8%, obsessive–compulsive disorder 3.5%, bipolar mixed episode 2.6%, and other diagnoses 4.0%. No statistically significant differences were observed among diagnostic groups in NLR, MLR, PLR, SII, or SIRI ($p=0.767, 0.404, 0.145, 0.287, 0.360$). Using published upper reference thresholds, 57.7% had ≥ 1 index above the 97.5th-percentile threshold; SIRI showed the highest exceedance (56.7%).

CONCLUSION: Hematological inflammatory markers did not differ by diagnosis, supporting a transdiagnostic inflammatory pattern in psychiatric inpatients. Elevated indices—particularly SIRI—suggest substantial inflammatory burden and warrant prospective studies with standardized clinical severity and comorbidity/medication assessment.

Keywords: Inflammations, lymphocyte, neutrophil, psychopathology