

## ASSOCIATIONS BETWEEN SUICIDE ATTEMPT SEVERITY AND ROUTINE INFLAMMATORY AND HEMATOLOGICAL MARKERS

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**BACKGROUND AND AIM:** Evidence for inflammation's role in suicidal behavior is growing, with peripheral inflammatory markers linked to suicide risk across psychiatric disorders. This study examined the relationship between suicidal behavior and clinically accessible, cost-effective inflammatory markers in individuals with prior suicide attempts.

**METHODS:** (Ethics Committee Approval must be obtained and the number should be specified). Among patients aged  $\geq 18$  presenting to the Emergency Department with a suicide attempt between 01.01.2020 and 01.07.2025, the association between attempt severity and routine hematological and biochemical parameters was investigated.

Hemogram values from the prior six months, including WBC, RBC and indices, platelets, WBC differential counts, iron, TIBC, ferritin, and lipid profiles, were collected retrospectively. NLR, PLR, MLR, and MHR were calculated. The study was approved by the institutional ethics committee (E-70632468-050.01-1054662).

**RESULTS:** Of the 132 patients, 59% were female ( $n = 78$ ), mean age  $32.45 \pm 12.89$  years. The most common method was drug-

overdose (56%,  $n = 74$ ), followed by cutting (20.5%,  $n = 24$ ) and jumping from height (9.1%,  $n = 12$ ). Cutting, jumping, hanging, and firearm use were classified as lethal methods, whereas drug overdose was classified as non-lethal. Lethal attempts were more frequent among males ( $p = 0.09$ ;  $\chi^2 = 9.73$ ); hanging more common in males, drug-overdose more common in females ( $p=0.022$ ;  $\chi^2 = 13.53$ ). In the lethal group, MLR ( $p = 0.013$ ) and MCHC ( $p = 0.019$ ) were higher, whereas TIBC ( $p = 0.053$ ) and platelet levels ( $p = 0.016$ ) were higher in the non-lethal group. Logistic regression controlling for age and sex showed lower platelet count associated with lethal attempts ( $p = 0.038$ ; OR = 0.989; 95% CI = 0.98–0.99), explaining 23.6% of the variance.

**CONCLUSIONS:** Markers derived from routine laboratory tests are cost-effective and may offer insight into biological mechanisms. However, their clinical utility in suicide risk assessment remains limited without concurrent psychosocial evaluation and requires validation in large prospective studies.

**Keywords:** Suicide attempt, Peripheral inflammatory markers, Neutrophil-to-lymphocyte ratio (NLR), Platelet-to-lymphocyte ratio (PLR), Monocyte-to-HDL ratio (MHR), Inflammation