

Inflammatory Biomarkers as Prognostic Factors in Short-Term Postoperative Complications in Operable Gastric Cancer

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Abstract

The study aimed to evaluate the effect of inflammatory blood markers on the postoperative outcomes of gastric cancer patients. We sought to assess the prognostic value of biomarkers and prognostic scores concerning short-term postoperative results.

Material and methods: A non-randomized retrospective study was conducted, including gastric cancer patients proposed for curative-intent gastrectomy between 2012-2024 in the general surgery department of Mures County Hospital. We measured systemic inflammation by determining the neutrophile-to-lymphocyte ratio, neutrophile-to-platelet ratio, and platelet-to-lymphocyte ratio, prognostic nutritional index (PNI), modified Glasgow score (mGS), and Systemic Inflammatory Index (SII).

Results: the white blood cell count ($p < 0.0001$), the neutrophile count ($p < 0.0001$), the lymphocyte count ($p = 0.001$), the platelet count ($p = 0.01$), the C-reactive protein levels ($p < 0.0001$), the albumin levels ($p < 0.0001$), the neutrophil- to- platelet ratio ($p = 0.01$), the prognostic nutritional index ($p < 0.0001$), the modified Glasgow score ($p < 0.0001$) and the Systemic inflammatory index ($p < 0.0001$) were strongly associated with the postoperative outcome. In the multivariate analysis, CRP levels and modified Glasgow score were significantly associated with postoperative outcome.

Conclusion: Systemic inflammatory markers play a significant role in predicting postoperative complications in gastric cancer. The interplay between inflammatory markers, surgical techniques, nutritional support, and complication management forms a multifaceted approach to predict postoperative outcomes.

Keywords: inflammatory markers, short-term outcome, gastric cancer