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Preoperative Predictors of Anastomotic Leak Following Digestive Cancer Surgery: A Retrospective Cohort Study

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Abstract

Background: Anastomotic leak remains one of the most severe complications in digestive oncologic surgery, significantly impacting postoperative morbidity and mortality.

Methods: A retrospective observational study was conducted. We collected and analyzed the data for 394 patients with digestive cancer, of which 248 received resection with primary anastomosis. The following variables were analyzed: tumor origin distribution, body mass index (BMI), gender, age, smoking status, tumor stage, American Society of Anesthesiologists score (ASA), hemoglobin levels and surgical indication (elective or emergency).

Results: Anastomotic leakage occurred in 38,4% of cases. Univariate analysis showed significant associations with ASA ≥3, advanced tumor stage, emergency surgery, smoking, underweight BMI, and anemia severity (risk increased in a severity-dependent manner). Multivariate analysis identified ASA ≥3 (OR 9.60; $p<0.001$), mild anemia (OR 3.11; $p=0.005$), moderate/severe anemia (OR 7.63; $p<0.001$), and advanced tumor stage (OR 2.43; $p=0.018$) as independent predictors.

Conclusions: Preoperative physiological status and anemia severity are independently associated with anastomotic leak following digestive cancer surgery. The graded effect of anemia suggests a potentially modifiable risk factor amenable to preoperative optimization. Advanced malignancy (stages III and IV) plays an independent role in anastomotic leakage incidence.

Keywords: anastomotic leak, digestive cancer, anemia, ASA score, preoperative risk factors, advanced stage tumors