

Comparative Analysis of Nutritional and Immune Status using the Conut Score in Patients Undergoing Billroth I and Billroth II / Roux-en-Y Reconstruction

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Abstract

Background: Gastric cancer surgery requires not only oncological radicality but also functional reconstruction. Billroth I remains the most physiological method of restoring continuity, whereas Billroth II and Roux-en-Y are most frequently adopted in the oncological treatment. Nutritional and immune competence strongly influence postoperative outcomes, and the Controlling Nutritional Status (CONUT) score has emerged as a validated biomarker integrating albumin, lymphocyte count, and cholesterol in predicting complications in surgically treated patients.

Methods: We conducted a prospective observational single-center study including 150 patients undergoing curative distal gastrectomy between October 2021 and December 2024. Reconstruction was performed using Billroth I (n=72) or Billroth II/Roux-en-Y (n=78). The CONUT score was assessed preoperatively (T0), early postoperatively (T1), and at three months (T2). Outcomes included CONUT evolution, postoperative complications (Clavien–Dindo), length of stay, readmission, and mortality.

Results: Both reconstruction groups demonstrated a significant postoperative increase in CONUT score (median 2 [1-3] at T0 to 3 [2-4] at T1, $p<0.001$), followed by partial recovery at three months. No differences were observed between Billroth I and Billroth II/Roux-en-Y at any timepoint. Higher CONUT values at T0, T1, and T2 independently predicted overall and major complications (OR range 1.15–1.25, $p<0.05$). Postoperative morbidity, mortality (3.3%), and hospital stay were similar across groups.

Conclusions: The CONUT score is an independent predictor of perioperative morbidity in gastric cancer, while the choice of reconstruction method does not significantly alter immunonutritional trajectories. Serial CONUT monitoring may enhance perioperative risk stratification.

Keywords: gastric cancer, gastrectomy, CONUT score, nutritional status