ABSTRACT

Background: Colorectal cancer (CRC) is a leading cause of both cancer incidence and mortality globally and in Indonesia. Yogyakarta province has the highest cancer prevalence nationally (Wiranata et al., 2023). Short-term mortality is a key indicator of early treatment outcomes. Various short term mortality indicators are used with the most common being 30-days mortality however, half of the short term mortality occurs beyond 30-days (Joung and Merkow, 2021). Studies specifically examining 60-day mortality in CRC patients undergoing tumor resection remain limited in Southeast Asia, particularly Indonesia.

Objective: This study aims to investigate demographic, clinical, tumor, and treatment factors associated with 60-day mortality among CRC patients undergoing tumor resection at Dr. Sardjito General Hospital.

Method**:** This is a retrospective cohort study analysing secondary data from 178 colorectal cancer patients who underwent tumor resection at Dr. Sardjito General Hospital between January 2016 and December 2019. The data were derived from a previously published study by Hutajulu et al (Hutajulu et al, 2024), utilizing the hospital colorectal cancer registry and medical records. Bivariate analysis using Chi-square and Fisher exact test was performed. Multivariable logistic regression and backwards stepwise logistic regression were conducted to determine independent predictors. Variables analyzed included age, sex, ECOG performance status, BMI, hemoglobin level, serum albumin level, tumor location, T status, N status, M status, TNM stage, treatment intention, and type of resection.

Results: The 60-day mortality rate was 13.48% (24 out of 178 patients). Bivariate analysis revealed significant associations between 60-day mortality and age >70 years (RR 3.08; 95% CI 1.24-7.64; p=0.032), ECOG performance status 2-4 (RR 3.61; 95% CI 1.61-8.08; p=0.003), hemoglobin <10 g/dL (RR 2.90; 95% CI 1.36-6.19; p=0.015), serum albumin <3.5 g/dL (RR 3.64; 95% CI 1.44-9.22; p=0.005), and N2 status (RR 2.89; 95% CI 1.20-6.94; p=0.026). In multivariable logistic regression, serum albumin <3.5 g/dL (OR 4.77; 95% CI 1.19-19.05; p=0.027) and age >70 years (OR 8.89; 95% CI 1.61-49.03; p=0.012) were independently associated with 60-day mortality. Backward stepwise regression confirmed serum albumin <3.5 g/dL (OR 4.98; 95% CI 1.27-19.62; p=0.022) and age >70 years (OR 8.28; 95% CI 1.57-43.75; p=0.013) as significant predictors, with ECOG performance status 2-4 also emerging as significant (OR 3.41; 95% CI 1.01-11.57; p=0.049).

Conclusion: Hypoalbuminemia, A poor ECOG performance status of 2-4, and age above 70 are important predictors of 60-day mortality in colorectal cancer patients undergoing tumor resection. Preoperative assessment of nutritional status and functional capacity, followed by intensive perioperative monitoring, may help reduce early postoperative mortality. Recommendations include future multicenter studies with a larger sample size and complete data to validate findings in this research and improve generalizability.

Keywords: colorectal cancer, 60-day mortality, postoperative mortality, tertiary hospital, risk factors, tumor resection