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[Esophageal Cancer](#)

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The Influence of Pretreatment Body Mass Index on Long-Term Prognosis of Patients With Esophageal Carcinoma After Surgery

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Background: Obesity, which is one of the most serious health problems in United States, is considered a risk factor for lower esophageal and gastric cardia adenocarcinoma. However, the influence of obesity on esophageal cancer survival has not been determined. The aim of this study is to examine the impact of obesity on the long-term mortality outcomes for patients with esophageal cancer after surgery.

Methods: A retrospective review was performed of 243 consecutive esophageal cancer patients undergoing surgery who did not receive neoadjuvant therapy. Patients were grouped according to pretreatment body mass index, as normal/underweight (<25 kg/m²) and overweight (≥25 kg/m²). Overall and recurrence-free survivals were investigated using Kaplan-Meier method, and Cox regression model was used to determine the significant prognostic factors on univariate and multivariate analysis.

Results: There were 67 patients (28%) who were classified as normal/underweight and 176 patients (72%) as overweight. In the overweight group, the numbers of patients who were male ($P < .001$), with adenocarcinoma ($P < .001$), and pathologic stage I ($p=0.003$) were significantly higher than in the normal/underweight group. There was no significant difference in postoperative morbidity rates between the two groups. Both local/regional and distant recurrence rates were significantly higher in the normal/underweight group ($P = .027$ and $P = .039$, respectively). The 5-year overall survival rates were 41% in the normal/underweight group, and 67% in the overweight group ($P = .002$). The 5-year disease free survival rates were 37% in the normal/underweight group, and 65% in the overweight group ($P = .001$). In univariate analysis, BMI ≥25 and lower esophagus tumor were factors associated with longer

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survival. Factors including older age, weight loss before treatment, smoking history, squamous cell carcinoma, tumor size >3 cm, pathologic stage III, and poorly differentiated carcinoma were significantly associated with shorter patient survival. In multivariate analysis, age, pathologic stage and tumor location ultimately remained as prognostic factors. Lower esophageal tumor ($P = .015$; HR, 0.386; 95% CI, 0.179-0.833) was related with better survival, and older age ($P = .014$; HR, 1.032; 95% CI, 1.006-1.057) and stage III disease ($P = .015$; HR, 6.162; 95% CI, 1.744-21.766) were related with poor survival.

Conclusions: Pretreatment BMI cannot be recognized as an independent predictor of long-term prognosis in esophageal cancer patients after surgery. However, high BMI tends to be associated with better prognosis.

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