Multimodality therapy and Survival Outcomes in Resectable Primary Small Cell Carcinoma of the Esophagus: A Multicenter Retrospective Study

Background: Primary small cell carcinoma of the esophagus (PSCCE) is a rare tumor, with high malignancy and poor prognosis. Currently, the optimal treatment strategy for resectable PSCCE is still controversial. Therefore, based on the multicenter data, we evaluated the treatment pattern and long-term survival outcomes of PSCCE patients receiving radical resection.

Methods: This retrospective multicenter study included patients with limited-stage PSCCE who received radical resection at seven high-volume cancer centers from January 2010 to December 2020. The clinical staging was determined in accordance with the 8th edition of the AJCC/UICC staging system. Overall survival (OS) rate was analyzed and the primary endpoint was 5-year OS rate. Survival curves were calculated using a Kaplan–Meier method and the log-rank test was performed to compare differences. Multivariate Cox survival analysis was performed to identify independent prognostic factors.

Results: A total of 352 patients with resected PSCCE were included. For PSCCE with local stage (cT1-2N0M0), the 5-year OS rate of patients receiving surgery combined with adjuvant therapy was 32.8%, with a median survival time (MST) of 44.0 months, and the 5-year OS rate of patients undergoing surgery alone was 19.2%, with an MST of 33.0 months. Patients who received surgery combined with adjuvant therapy showed a better survival rate than those who received surgery alone (P=0.035, Figure 1A). Multivariate Cox survival analysis showed an independent correlation between receiving surgery combined with adjuvant therapy and better prognosis [HR (95%CI): 1.616 (0.883-2.950), P=0.042]. For PSCCE with locally advanced stage (cT3N0M0 or cT1-4aN+M0), patients receiving neoadjuvant therapy followed by surgery appeared superior long-term survival compared to patients receiving surgery combined with adjuvant therapy and patients receiving surgery alone (the 5-year OS rate: 10.5% vs. 8.5% vs. 0.0%, MST: 26.0 vs. 19.0 vs. 14.0 months, P=0.007, Figure 1B). Multivariate Cox survival analysis showed that neoadjuvant therapy followed by surgery was independently associated with better prognosis [HR (95%CI): 1.570 (1.071-2.304), P=0.021].

Conclusions: Surgery combined with adjuvant therapy can be recommended for PSCCE patients with local stage (cT1-2N0M0). In patients with locally advanced stage (cT3N0M0 or cT1-4aN+M0), neoadjuvant therapy followed by surgery should be considered.

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