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Tumor Length as a Risk Factor for Cause-specific Death in Patients with Esophageal Squamous Cell Carcinoma: A Competing Risk Analysis

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Objective: Previous studies have indicated that tumor length can impact the overall survival of esophageal squamous cell carcinoma (ESCC) patients. The aim of this study was to evaluate the cumulative incidence of death and to construct a model to predict the risk of cause-specific death for patients with ESCC by competing risk analysis.

Patients and methods: A total of 1650 ESCC patients who had undergone surgery between August 2000 and October 2012 in our hospital were retrospectively analyzed. In addition, 1681 samples retrieved from the SEER Program between 2010 and 2015 were defined as the external validation set. Cumulative incidence function (CIF) was calculated for mortality. The sub-distribution hazard model was developed to predict the risk of cause-specific death. The log-rank test and Cox regression analysis were also performed for survival analysis.

Results: Tumor size, age and lymph nodes involvement were significant factors for a high risk of cause-specific death as determined by competing risk analysis (all $P<0.05$). However, the sub-distribution model compared with traditional survival analysis resulted in a lower estimate of cause-specific mortality probability. According to the CIF, higher incidence rates of cause-specific death were observed among patients with tumor size ≥2.7 cm versus<2.7 cm (49.4% vs 35.0%). Similar results were also found in samples acquired from the SEER database.

Conclusions: We have developed a competing risk model to discuss cause-specific death for ESCC patients. A tumor size greater than 2.7 cm was found to be a prognostic indicator that is particularly associated with a higher risk of cancer-specific mortality.

Biography:

Zhesheng Wen is the professor of oncology thoracic surgery in Sun Yat-Sen University Cancer Center and he masters the operating skill of various types of thoracic surgeries.