The Association between Surgeon and Hospital Volume and In-hospital Fatalities following Lung Cancer Resections: The Experience of an Asian Country

林恆慶
Lien YC;Huang MT;Lin HC

Abstract

Background: We used 4-year nationwide population-based data to explore the volume-outcome relationships for lung cancer resections in Taiwan and to determine whether there is any association between high-volume hospitals or high-volume surgeons and lower in-hospital mortality rates.

Methods: We use pooled data for the years 2001 through 2004 obtained from the National Health Insurance Research Database in Taiwan. A total of 4,841 patients, identified as having undergone pulmonary resections for lung or bronchial tumors during the period of this study, were treated by 377 surgeons in 79 hospitals. Multivariate logistic regression analyses were then employed to assess the crude and adjusted odds ratio of in-patient fatalities between surgeon and hospital lung cancer resection volume groups.

Results: Patients treated by low-volume surgeons had significantly higher in-hospital fatality rates than those treated by either medium-volume surgeons (2.3% versus 1.0%; $p < 0.001$) or high-volume surgeons (2.3% versus 0.6%; $p < 0.001$). However, hospital case volume alone is not a significant predictor of hospital in-patient fatalities for lung cancer resections. With increasing surgeon volume, there was a decline in the adjusted odds ratio of hospital in-patient deaths. The odds of hospital in-patient deaths for those patients treated by low-volume surgeons were 2.04 times those of medium-volume surgeons, and 2.63 times those of high-volume surgeons.

Conclusions: We conclude that after adjusting for patient, surgeon, and hospital characteristics, an inverse volume-outcome relationship does exist for surgeons, but not for hospitals, in Taiwan.