Risk Factors for Fatal Hemoptysis after Concurrent Chemoradiation Therapy (CCRT) in Patients with Advanced Non-small Cell Lung Carcinoma (NSCLC)

Background: Massive and mostly fatal hemoptysis is a serious complication leading to death in lung cancer patients. Thirteen cases of fatal hemoptysis after CCRT for advanced NSCLC have been identified in our hospital for 3 years. To investigate whether fatal hemoptysis is associated with CCRT, the authors retrospectively analyzed risk factors for fatal hemoptysis after CCRT. Methods: The records of 213 patients with advanced NSCLC who were treated with CCRT from April 2004 to June 2007 were reviewed. 151 patients (130 men and 21 women) with a mean age of 65 years were studied for toxicity concerning fatal hemoptysis. The others were not evaluable because of lost to follow-up or early termination of therapy. Results: Thirteen (8.6%) out of 151 patients died of fatal hemoptysis, all but three had central and squamous tumors. Most of them had radiation pneumonitis or fibrosis. Median interval until death due to fatal hemoptysis after CCRT was 8.8 months ranging from 7 days to 22 months. By multivariate analysis, the clinical factors with significant correlation with fatal hemoptysis included poor performance status (OR=8.10, 95% CI, 1.568-41.849, p=0.01) and Central location with squamous histology (OR=4.28, 95% CI, 1.049-17.453, p=0.04). Conclusions: Centrally located squamous cell tumor and poor performance status have been found to be significantly associated with fatal hemoptysis in advanced NSCLC patients treated with CCRT.