

## عنوان مقاله:

Predictive Factors of Radiation-Induced Lung Toxicity in Lung Cancer Patients: A Retrospective Study

## محل انتشار:

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## نویسنده:

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## خلاصه مقاله:

**Background:** Radiation-induced lung toxicity is an important dose-limiting toxicity in lung cancer radiotherapy, for which there are no generally accepted predictive factors. This study seeks to identify risk factors associated with the development of severe radiation-induced lung toxicity using clinical and dosimetric parameters. **Methods:** We reviewed the medical records of 54 patients with histologically proven stage III non-small cell lung cancer treated with three dimensional-conformal radiotherapy at Alexandria Main University Hospital between January 2008 and December 2011. The original treatment plans for those patients were restored and imported to a treatment planning system. Lung dose-volume histograms and various dosimetric parameters were calculated. Univariate and multivariate logistic regression analyses were performed. **Results:** The following grades of radiation-induced lung toxicity were observed in patients - grade 0: 17 (31.5%), grade 1: 5 (9.3%), grade 2: 13 (24.1%), grade 3: 15 (27.8%), and grade 4: 4 (7.4%). A total of 19 (35.2%) patients developed grade  $\geq 3$  and were considered to have an event. Univariate analysis showed that age, presence of chronic obstructive pulmonary disease and location of the primary tumor had significant associations with severe radiation-induced lung toxicity. Other dosimetric variables such as tumor side, histology, forced expiratory volume in 1 s, smoking, and gender showed no significant correlations with severe radiation-induced lung toxicity. Multivariate analysis showed that the presence of chronic obstructive pulmonary disease ( $P=0.001$ ) and location of the primary tumor ( $P=0.010$ ) were the only predictive factors for severe radiation-induced lung toxicity. **Conclusion:** This study demonstrates that patients with chronic obstructive pulmonary disease and lower lung lobe tumors have a high risk of severe radiation-induced lung toxicity when treated with combined chemoradiotherapy. These easily obtained clinical factors should be considered when calculating the risk for radiation-induced lung toxicity.

## کلمات کلیدی:

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