

The Efficacy of Patient With Untracentral Non-Small Cell Lung Cancer After Stereotactic Body Radiotherapy

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Objectives: To present the outcomes of patients with primary and untracentral non-small-cell lung cancer (NSCLC) after CyberKnife(CK) in 56Gy in our series.

Methods: We studied untracentral NSCLC patients, all with primary tumor, treated with SBRT between 2010 and 2018 retrospectively. The item, untracentral (UC)lung cancer defined as planning target volume (PTV) touching or overlapping tracheae, main bronchi, esophagus, heart or major vessels Within 2 cm around the bronchi. SBRT was delivered to total doses of 56 Gy in 6 fractions (n=2), 7 fractions (n=31), 8 fractions (n=25), 9 fractions (n=1) in consecutive days. We evaluate the results of clinical toxicity, overall survival (OS), progression-free survival (PFS) and local failure(LC).

Results: The gross of 59 patients were included in our study whose median age was 68 years, 74.6% of them accepted any therapy before. The median PTV was 77.8cc (range, 43.3, 91.8) and the median PTV volume was 59.3 cm³ (range, 12.9-257.4). With a median follow-up of 57 months (range, 6-90 months), the median OS was 32 months (range, 2-105 months) and 5-year survival was 42.1%. On our univariate analysis, OS was associated with tumor volume (≥ 53.1 vs < 53.1 cm³, $p=0.016$) and PTV dose (< 85.9 vs ≥ 85.9 cGy, $p=0.039$). On multivariate analysis, tumor volume which smaller than 53.1 cm³ has better OS ($p=0.035$). The median time of LC and PFS were 14 months and 20 months respectively. On the aspect of radiation toxicity, there were two cases (3.39%) with grade=3 COPD and one was intolerable.

Conclusions: SBRT using 56Gy delivered 7 or 8 fractions is available. On the other hand, a smaller tumor volume was associated with better OS.