

Stereotactic Body Radiotherapy of Non-Small Cell Lung Cancer in Medicana Ankara International Hospital CyberKnife Radiosurgery Center

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Abstract

Objectives: Stereotactic Body Radiotherapy (SBRT) is a novel treatment option for patients with medically inoperable early stage non-small cell lung cancer (NSCLC). This retrospective analysis reports outcomes for the treatment of non-small cell lung cancer (NSCLC) with SBRT.

Methods: Seventy-two consecutive patients with medically inoperable lung tumors were treated from July 2013 through December 2015 and included in this study. Stereotactic tracking was facilitated by either spine or lung-based image guidance, with Cyberknife robotic radiosurgery system. The Kaplan-Meier model was used to determine rates of local control, progression of disease and overall survival. Univariate and multivariate analysis has been done to analyze the effects of clinical parameters consisting of age, histology, stage, tracking method, and prescription dose.

Results: The median follow-up for this cohort was 13 months (1-30). The median age was 65 (41-79). Fifty-two patients (72.2%) were male. Fifty-three patients (73.6%) had pathological diagnosis consisting of 39 adenocarcinoma and 14 squamous cell carcinoma, whilst 19 patients (26.4%) was diagnosed with PET-CT only. Fifty-nine patients (81.9%) were medically inoperable and 13 patients (18.1%) refused surgical treatment. Tumor sizes of <2cm, 2-3 cm, 3-5 cm and 5-7 cm were 15 (20.8%), 31(43.1%), 22(30.6%) and 4 (5.5%) respectively. Median prescription dose were 60 Gy in 3 fractions with a range of 48-60 Gy in 3-5 fractions. Local control at one year for the entire cohort was 97.2%. Overall survival at one year was 98.6%. Only grade 2 or less toxicity (National Cancer Institute Common Terminology Criteria for Adverse Events) was observed.

Conclusions: Stereotactic Body Radiotherapy with Cyberknife is an effective and safe treatment procedure for early stage non-small cell lung cancer patients.

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Abstract

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