

7. FAILURE PATTERNS AFTER STEREOTACTIC BODY RADIATION THERAPY FOR EARLY NON-SMALL CELL LUNG CANCER AND THEIR IMPLICATIONS FOR FUTURE MANAGEMENT

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PURPOSE/OBJECTIVE(S): Stereotactic Body Radiation Therapy (SBRT) is an effective modality for patients with early stage non-small cell lung cancer (NSCLC) who are unsuitable for surgical management. We performed a retrospective review to evaluate the clinical outcomes and patterns of failure of patients who completed SBRT for early stage NSCLC.

METHODS AND MATERIALS: Twenty-five veteran patients from GV VAMC with T1-3N0 NSCLC were referred to the neighboring University of Mississippi Medical Center for treatment with SBRT between July 2010 and June 2014. After completion of therapy, the patient's care was then transferred back to GV VAMC for subsequent follow-up visits and surveillance imaging. All patients received a prescription of >100 Gy biologically effective dose (BED). Fifty Gray (Gy) in five fractions was prescribed to 19 (76%) of the patients, while three (12%) patients received 60Gy in three fractions and another three (12%) patients received 48Gy in four fractions. Clinical response was evaluated using RECIST 1.1 criteria. The primary endpoints included assessment of overall survival (OS), disease free survival (DFS), local control (LC), regional failure (RF), and distant failure (DF) rates.

RESULTS: The median follow-up was 37 months and the median OS and DFS rates were 50 months and 45.3 months, respectively. The three-year OS, DFS, LC, RF, and DF rates were 68.2%, 64.7%, 78.6%, 35.3%, and 8.3%, respectively. Eleven (44%) patients failed. Two (8%) with LF alone, four (16%) with RF, and three (12%) patients had LR, RF and DF. Of the five LFââ™s, two of the volume (PTV), while three patients had failures outside the PTV. There were a total of 12 deaths at last follow-up. Three patients died due to the malignancy, while one patient died from complications with radiation-related pneumonitis.

CONCLUSION: Our results were comparable to several larger reported series. While LC is excellent, failure within the same lobe is a problem with SBRT. Strategies such tighter constraints of normal structures need to be applied, as about a third of these patients will require retreatment of a new lesion in the same lobe that was outside the previously irradiated field.