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Abstract

Clinical outcomes of Stereotactic Body Radiation Therapy (SBRT) for the treatment of early-stage Non-Small Cell Lung Cancer (NSCLC) in the Community Hospital Setting

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Abstract

Objectives: SBRT is an effective treatment for medically inoperable patients with early-stage NSCLC. We evaluated outcomes with regards to local control, overall survival, and toxicity of SBRT for a medically inoperable patient population treated at Anne Arundel Medical Center. We determined clinical efficacy of definitive SBRT in medically inoperable early-stage NSCLC and compared outcomes to published data.

Methods: Between 2012 and 2015, 44 patients received a first course of SBRT for early-stage NSCLC. Five of the 44 patients received multiple course of SBRT, though the second, third or fourth courses were not included in this study due to a disproportionately high risk of failure and toxicity. All 44 tumors were treated on the Novalis Tx with cone-beam computed tomography (CT) localization. Simulation was conducted with 4D evaluation of the target and treatment was delivered to a static volume. There were two dosing schemes utilized: 54 Gy in 3 treatments and 50 Gy in 5 treatments, dependent on location being peripheral or central, as per RTOG guidelines.

Results: At a median follow-up of 19 months, the overall survival is 86%. Of the 44 patients, 36 (82%) had surveillance imaging done at least once, which found 31 (86%) patients were controlled locally, 2 (6%) had local progression, 2 (6%) had regional nodal, and 1 (3%) had distant failure to the brain. Radiation Therapy Oncology Group (RTOG)/Common Toxicity Criteria were reported in 43 patients, one was lost to follow-up. Of the 43 patients seen post-treatment, 3 experienced toxicity: 1 (2%) Grade 2 chest wall pain, 1 (2%) Grade 3 chest wall pain, and 1 (2%) Grade 3 pneumonitis.

Conclusions: Though we are limited by overall short follow-up time, SBRT provides good local control and limited toxicity, and therefore is an excellent treatment option for patients with medically inoperable NSCLC, our results are comparable to those reported in recently concluded clinical trials, RTOG 0236 and RTOG 0813.

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