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Abstract

Stereotactic Ablative Body Radiotherapy versus Conventionally Fractionated Radiotherapy for Early Stage Large Cell Neuroendocrine Carcinoma of the Lung

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Abstract

Objectives: Early stage large cell neuroendocrine carcinoma (LCNEC) of the lung is typically managed with surgery. However, some patients will be unable to undergo surgery for a variety of reasons and radiation will be used instead. Radiation options include stereotactic ablative body radiotherapy (SABR) or conventionally fractionated radiation therapy (CFRT). We used the national cancer database (NCDB) to look at predictors of SABR and if there was a difference in outcome.

Methods: We queried the NCDB for patients with T1-2N0 LCNEC treated with lung directed radiation. Multivariable logistic regression identified predictors of SABR. Cox regression identified predictors of survival. Propensity matching was done to account for indication bias.

Results: We identified 754 patients meeting above criteria, with 238 (32%) treated with SABR. Median SABR dose was 50 Gy (48-60 Gy) in 4 fractions (3-5). Median CFRT dose was 65 Gy (60-68 Gy) in 33 fractions (27-35). Predictors of SABR were increased distance to facility, no chemotherapy, treatment at an academic center, T1 disease, and more recent year of treatment. Predictors of worse survival were male gender, T2 disease, older age and CFRT. After propensity matching, median survival was 34.7 months compared to 23.7 months in favor of SABR (p=0.02).

Conclusions: SABR for LCNEC has increased over time and was associated with improved survival, suggesting that it may be the preferred option in early stage inoperable disease.

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