PRESENTER:
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Title: Survival and Cognition in Closely Surveyed Patients with Small Cell Lung Cancer Versus Prophylactic Cranial Irradiation

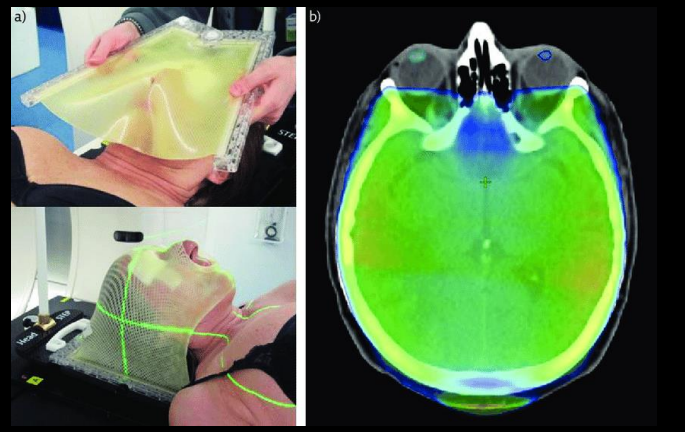
BACKGROUND

The initial standard of care component for early stage (limited stage) small cell lung cancer (SCLC)) is treating the thoracic disease with radiation therapy with concurrent chemotherapy. Following thoracic chemoradiation it is standard to treat the brain with prophylactic cranial irradiation (PCI). A major drawback of irradiating the entire brain is the significant cognitive impact of such treatments, resulting in decreased short term memory. As SCLC patients live longer each year due to better systemic therapies the consequences of cranial irradiation and the effect on quality of life is becoming a greater concern. We hypothesize that close brain MRI surveillance of patients with limited stage SCLC and the utilization of focal Gamma Knife radiosurgery for those who develop small volume brain metastasis will improve survival and decrease cognitive decline.

METHODS

The following work focused on a retrospective cohort of patients diagnosed with small cell lung cancer at Vidant Health Center from 2010 to 2021. We completed a chart review via EPIC and ECU's Department of Radiation Oncology's Aria database of this cohort to determine the patients' diagnosis date, initial stage, types of treatments received, and overall survival rates. Patients were excluded if they were extensive stage at diagnosis, if they did not receive any type of radiation therapy, or if they did not survive more than 90 days after diagnosis to exclude poor performing outliers. This cohort was separated into those who were observed for the development of intracranial disease vs those who underwent PCI. The primary outcomes measured in this study were survival rates.

Close surveillance of patients with **small cell lung cancer** could lead the **similar survival rates** when **compared to** adding **prophylactic cranial irradiation** to the treatment plan.



RESULTS

Evaluation plan: Once Kaplan Meier survival curves are created, we will be able to compare the survival rates and cognitive decline of our two subject groups. We anticipate that the patients who were closely watched and received GKRS if intracranial disease occur will have similar overall survival to those who received PCI while saving the patients from cognitive decline.

CONCLUSION

Potential Impact: The current national guidelines state that patients in the early stages of small cell lung cancer should receive PCI since the brain is a very common site of metastasis. This study could show that with close surveillance of intracranial disease combined with modern focused radiotherapy similar overall survival can be achieved with less impact on cognition and improved quality of life. This could greatly impact the lives and families of the 30,000 patients that are diagnosed with SCLC in the United States each year.

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