

Nationwide Distribution of Linear Accelerator versus Gamma Knife Stereotactic Radiosurgery Utilization for Metastatic Brain Disease in Academic versus Community Hospitals

BACKGROUND

- Single-fraction stereotactic radiosurgery (SRS) is often the preferred treatment modality for metastatic brain disease, particularly when patients have a small enough volume of disease to preclude whole brain radiation therapy and its associated permanent cognitive morbidity.
- The two predominant SRS treatment modalities are Gamma Knife and linear accelerator (LINAC).
- The recent impact of SRS modality in academic versus community hospital settings in the United States (US) since the 2013 implementation of the American Tax Payer Relief Act (ATRA) has yet to be examined.

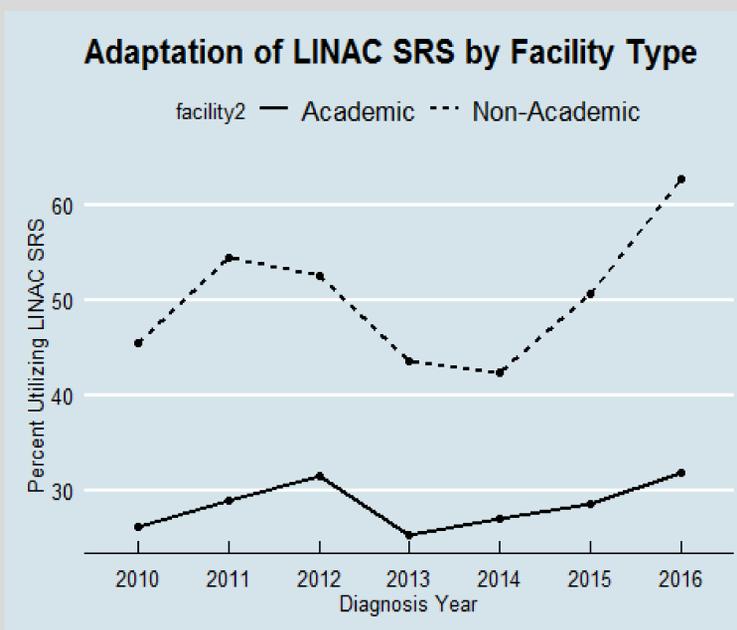
MATERIALS AND METHODS

- Brain metastases patients from non-small cell lung cancer (NSCLC) throughout the United States having undergone SRS were identified using the 2010-2016 National Cancer Data Base (NCDB).
- SRS utilization in academic versus community (non-academic) hospitals was identified and assessed.

RESULTS

- Of the 4,012 SRS patients examined, the majority (64%) were treated at academic hospitals.
- Beginning in 2014, LINAC SRS rapidly increased in popularity compared to GKRS, reversing an annual decline in utilization originating from 2011.
- The 63% LINAC composition of SRS cases at non-academic centers in 2016 was an all-time high, a 12% increase from a year earlier.
- This was markedly different than SRS utilization at academic hospitals, where despite a steady increase in LINAC SRS since 2013, GKRS remained the predominant SRS modality, comprising 73% of cases in 2016.

Figure 1: Trends in LINAC-based SRS use by academic versus non-academic facilities over time from 2010-2016



CONCLUSIONS

- The implementation of LINAC over Gamma Knife SRS in the non-academic hospital setting has markedly increased in the timespan since ATRA implementation.
- In 2016, LINAC SRS comprised more than 60% of SRS community hospital cases (an all-time high) compared to only 27% of academic hospital SRS cases.
- Without the substantially increased SRS reimbursement advantage formerly associated with Gamma Knife compared with LINAC prior to ATRA implementation, the non-academic setting appears to be more sensitive than academic centers to conditions optimizing reimbursement.

DISCLOSURES

McClelland – nothing to disclose
Degnin – nothing to disclose
Chen – nothing to disclose
Watson – nothing to disclose
Jaboin – nothing to disclose

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