Clinical Outcomes Following Laser Interstitial Thermal Therapy For Brain Metastases Failing Radiosurgery May Not Differ by Primary Tumor

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Disclosures

• The authors have disclosures to report.
Introduction

- Laser interstitial thermal therapy (LITT) is a minimally-invasive, targeted adjunctive therapy for intracranial pathologies.

- LITT is increasingly utilized for brain metastases failing radiosurgery.

- We sought to investigate the relationship between primary tumor of origin and clinical outcomes following LITT for brain metastases.
Methods

• **Study Design:** Retrospective analysis

• **Patient Selection:** All patients undergoing LITT for brain metastases previously treated with stereotactic radiosurgery (SRS) from 2013-2018 at the University of Miami Miller School of Medicine.

• **Primary outcomes:** Overall survival (OS), Local control (LC)

• **Secondary outcomes:** Complication rate, length of hospital stay (LOS).

• **Statistical Analysis:** Kaplan-Meier survival analysis and log-rank statistical testing was used to compare primary outcomes.
Results

- Thirty-six patients underwent 45 LITT procedures for brain metastases failing SRS with a mean follow-up of 16.8 months.

- Mean age = 57 years (range 29-81)

- 83.3% of patients were female

Table 1. Characteristics of 45 brain metastases treated with LITT
Results

- Median OS for all 45 lesions was 25.5 months.
- Recurrence-free rates at 1- and 2-year follow up were 75.0% and 64.0%, respectively.
Results

• LC and OS did not differ between primary tumor subgroups (p=0.93 and p=0.59, respectively).
  • “Other” category not included in log-rank analysis.
Results

• Complication rate was 4.4% (1 wound infection and 1 episode of post-operative seizure).

• LOS was 1 night except in cases with complications, in which LOS was 2 nights.
Discussion

• We report our preliminary findings in a series of 45 brain metastases treated with LITT. Recurrence-free rates at 1- and 2-year follow up were 75.0% and 64.0%, respectively.

• We found no significant differences in LC or OS following LITT for recurrent brain metastases by primary tumor.

• Larger cohorts with longer follow-up periods should be further studied.
Summary Points

• LITT is increasingly utilized for brain metastases failing radiosurgery.

• We report our preliminary findings in a series of 45 brain metastases treated with LITT. Recurrence-free rates at 1- and 2-year follow up were 75.0% and 64.0%, respectively.

• Clinical outcomes (OS and LC) following LITT for radiosurgery-resistant brain metastases may not differ by primary tumor of origin.