

World Neurosurg. 2024 Jul 8:S1878-8750(24)01173-2. doi: 10.1016/j.wneu.2024.07.031.

Online ahead of print.

The feasibility of robot assisted laser interstitial thermal therapy (LITT) for brain tumors in octogenarians

Victor M Lu ¹, Muhammet E Gurses ², Khushi H Shah ², Jay Chandar ², Adham M Khalafallah ², Ashish H Shah ², Ricardo J Komotar ², Michael E Ivan ²

Affiliations

PMID: 38986945 DOI: [10.1016/j.wneu.2024.07.031](https://doi.org/10.1016/j.wneu.2024.07.031)

Abstract

Background: The use of robot assisted laser interstitial thermal therapy (LITT) is emerging as a viable treatment option for brain tumors patients aged between 80-90 years (octogenarians). Correspondingly the aim of this study was to describe the clinical feasibility of octogenarians undergoing LITT procedure for brain tumors at our institution.

Methods: A retrospective review was conducted of all robot assisted LITT procedures performed at our institution between 2013-2023 for octogenarians. Comparison of continuous variables was by student t-tests, and Kaplan-Meier estimates were used to estimate survival outcomes.

Results: A total of 20/311 (6%) LITT patients in the search cohort were octogenarians. Mean age was 82.6 years (range, 80.1-88.0) with 13 (65%) females. Brain tumor lesions most commonly were located on the left side (65%), and for ablation, all were single trajectories with mean number of 2.3 ablations. No operative complications were seen during hospitalization, with mean length of stay of 1.6 days and most common disposition destination being home (95%). There were no 30- or 90-day readmissions or emergency room presentations. Mean follow-up was 12.4 months without any complications in that time. The most common pathology in our cohort was glioblastoma (GBM, 55%).

Conclusion: Robot assisted LITT is a safe and effective treatment option for brain tumors in octogenarians with a very low morbidity risk. Therefore, further investigations is required to understand how LITT can translate to therapeutic benefit in patients aged over 80 years old with brain tumors.

Keywords: GBM; LITT; ablation; brain tumor; elderly; glioblastoma; laser; octogenarian.

Copyright © 2024 Elsevier Inc. All rights reserved.

[PubMed Disclaimer](#)