

LAANTERN study

Laser Ablation of Abnormal Neurological Tissue Using Robotic [NeuroBlate](#) System (LAANTERN).

Patients undergoing [stereotactic laser ablation](#) were prospectively enrolled by Rennert et al., from Department of Neurosurgery, University of [California San Diego](#), Department of Neurosurgery, Wake Forest School of Medicine, [Winston-Salem](#), Orlando Neurosurgery, Division of Neurosurgery, Vancouver General Hospital, Canada. Department of Neurosurgery, Duke University Medical Center, Durham, Department of Neurological Surgery, Thomas Jefferson University, Philadelphia, Department of Neurosurgery, Rose Ella Burkhardt Brain Tumor and Neuro-Oncology Center, Cleveland Clinic, Kansas City, Department of Neurosurgery, Washington University, St. Louis, Department of Neurosurgery, University of Minnesota, Minneapolis, USA, in the Laser Ablation of Abnormal Neurological Tissue (LAANTERN) registry. Data from the first 100 enrolled patients are presented here.

Clinical indications for SLA include treatment of primary intracranial tumors (48%; 81% being high-grade gliomas [HGGs]), brain metastases (BMs, 34%), epilepsy (16%), and other (2%). For HGGs, SLA was equally likely used for newly diagnosed (45%) or previously treated/recurrent lesions (55%, $P = 0.54$). By contrast, SLA was predominantly used as treatment for BMs in which radiation therapy/radiosurgery had failed (91%), with only 9% of SLAs performed as initial treatment for newly diagnosed lesions ($P < 0.001$). Of all SLAs performed, 45% of the procedures were in lieu of surgical resection, with 43% performed because the lesion was not accessible by conventional neurosurgical techniques.

HGGs and BMs are the leading indications for SLA in the LAANTERN study. For HGGs, SLA is equally used in the presenting or previously treated/recurrent setting. For BMs, SLA is typically used in the recurrent setting. SLAs are equally likely to be performed for difficult-to-access lesions or in lieu of conventional open surgery ¹⁾.

¹⁾

Rennert RC, Khan U, Tatter SB, Field M, Toyota B, Fecci PE, Judy K, Mohammadi AM, Landazuri P, Sloan A, Leuthardt E, Chen CC. Patterns of Clinical Use of Stereotactic Laser Ablation: Analysis of a Multicenter Prospective Registry. *World Neurosurg*. 2018 Aug;116:e566-e570. doi: 10.1016/j.wneu.2018.05.039. Epub 2018 May 14. PubMed PMID: 29772367.

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