

Clinical Outcomes Following Preoperative Stereotactic Radiosurgery for Brain Metastases in a Community Setting

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Categories: Radiation Oncology

Keywords: metastasis, preoperative, community

How to cite this abstract

Manning M, Vaslow Z, Stern J, et al. (April 02, 2020) Clinical Outcomes Following Preoperative Stereotactic Radiosurgery for Brain Metastases in a Community Setting. Cureus 12(4): a521

Abstract

Objectives: Preoperative rather than postoperative stereotactic radiosurgery (SRS) is increasingly used the management of patients with resectable brain metastases, given high rates of local control and lower radionecrosis risk. The preoperative SRS strategy requires a highly coordinated multidisciplinary treatment approach presenting challenges in community practice. The current retrospective study presents clinical characteristics and clinical outcomes in patients treated with preoperative SRS in a community health system.

Methods: We queried retrospectively a radiosurgery database registry with 700 unique SRS cases 11/2012- 3/2019. We included patients who received preoperative SRS followed by resection planned within 48 hours. A weekly conference, treatment navigator and subspecialty coordination were applied to the process. Radiosurgery was delivered using a linac-based platform capable of delivering rapid radiotherapy without a flattening filter and a relocatable mask. All patients were managed in a multidisciplinary approach with neurosurgery and radiation oncology participation. Targeting was carried out with a 3T MRI using 1 mm axial slices. We obtained information on patient gender, age, number of lesions, primary cancer histology. Overall survival (OS) was estimated using Kaplan-Meier methods.

Results: We found 72 patients that met our criteria for inclusion in this evaluation. Median age was 61 yrs. with a majority being females (n=40, 55.6%). Number of SRS targets was between 1 and 13; median number of targets was 3. Most common primary site histology was non-small cell lung (55.6%), followed by breast (11.1%). In terms of care coordination, the time from diagnosis of brain metastasis to SRS ranged from 1-30 days with a median of 11 days. The median OS was 42 weeks (95% CI: 18, 89), with a 12 month OS of 45.2% (SE 5.93%).

Conclusions: This study validates a coordinated multidisciplinary model for preoperative SRS and supports the feasibility of this treatment in community practice.

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Abstract

Published 04/02/2020

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