



# Research Week 2022

## Outcomes of Adults Treated with Brain Hypofractionated Stereotactic Radiosurgery in an Established CNS Multidisciplinary Clinic for Radiation Oncology and Neurosurgery

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### Keywords

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### Abstract

#### Background

Our multidisciplinary central nervous system (CNS) clinic provides synchronous consultation and follow-up visits with a neurosurgeon and a radiation oncologist at a community hospital center. Hypofractionated stereotactic radiosurgery (hfSRS) is commonly used for management of primary and secondary malignant disease of the brain. A significant challenge in the follow-up of patients treated with hfSRS to brain lesions is to distinguish pseudoprogression (PP) from tumor recurrence (TR) for which treatment and prognosis are different.

#### Objectives

To determine the rate of tumor control (TC), pseudoprogression (PP) and tumor recurrence (TR) among adult patients with brain primary and secondary malignant disease treated at a multidisciplinary CNS community hospital center clinic with hfSRS.

#### Methods

We conducted an IRB-approved retrospective review of treatment outcomes for consecutive patients treated with hfSRS for brain tumors between June 2017 and December 2019. Post-treatment imaging and/or histology when available were reviewed for assessment of treatment response.

## Results

Forty-five brain lesions in 18 consecutive patients were treated with hfSRS over a period of 30 months. The rate of tumor control with no evidence of progression or pseudoprogression was 69% (31 out of 45 lesions). Among the remaining 14 lesions, TR was determined in eight lesions for an overall rate of TR of 18% (8 out of 45 lesions). Four lesions (9%) were determined to represent PP.

## Conclusions

Adult patients with brain primary and secondary malignant disease evaluated and treated in our multidisciplinary CNS clinic have a high rate of disease control in line with previously published results from large academic institutions and multi-institutional clinical trials. Radiographic progression is promptly evaluated and patients are managed with systemic, surgical, and radiation treatment modalities to minimize re-treatment of PP and to avoid undertreatment of TR.