

J Neurooncol. 2024 Jan 28. doi: 10.1007/s11060-023-04545-7. Online ahead of print.

GammaTile[®] (GT) as a brachytherapy platform for rapidly proliferating glioblastomas: from case series to clinical trials

Anudeep Yekula¹, Dominic J Gessler¹, Clara Ferreira², Rena Shah³, Margaret Reynolds², Kathryn Dusenbery², Clark C Chen^{4 5}

Affiliations

PMID: 38281303 DOI: [10.1007/s11060-023-04545-7](https://doi.org/10.1007/s11060-023-04545-7)

Abstract

Purpose: Radiation plays a central role in glioblastoma treatment. Logistics related to coordinating clinic visits, radiation planning, and surgical recovery necessitate delay in radiation delivery from the time of diagnosis. Unimpeded tumor growth occurs during this period, and is associated with poor clinical outcome. Here we provide a pilot experience of GammaTile[®] (GT), a collagen tile-embedded Cesium-131 (¹³¹Cs) brachytherapy platform for such aggressive tumors.

Methods: We prospectively followed seven consecutive patients (2019-2023) with newly diagnosed (n = 3) or recurrent (n = 4) isocitrate dehydrogenase wild-type glioblastoma that grew > 100% in volume during the 30 days between the time of initial diagnosis/surgery and the radiation planning MRI. These patients underwent re-resection followed by GT placement.

Results: There were no surgical complications. One patient developed right hemiparesis prior to re-resection/GT placement and was discharged to rehabilitation, all others were discharged home-with a median hospital stay of 2 days (range: 1-5 days). There was no 30-day mortality and one 30-day readmission (hydrocephalus, requiring ventriculoperitoneal shunting (14%)). With a median follow-up of 347 days (11.6 months), median progression free survival of ≥ 320 days (10.6 months) was achieved for both newly and recurrent glioblastoma patients. The median overall survival (mOS) was 304 and 347 days (10 and 11.5 mo) for recurrent and newly diagnosed glioblastoma patients, respectively.

Conclusion: Our pilot experience suggests that GT offers favorable local control and safety profile for patients afflicted with rapidly proliferating glioblastomas and lay the foundation for future clinical trial design.

Keywords: Brachytherapy; GammaTile; Glioblastoma; Rapid regrowth.

© 2024. The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

[PubMed Disclaimer](#)