Case Reports Anticancer Res. 2025 Jan;45(1):201-207. doi: 10.21873/anticanres.17405.

Elimination of High-grade Gliomas Through Induced Cytolysis, Elucidated by Two Patient Cases

Christos Panotopoulos [1], George Athanasiou [1], Stavros Stavropoulos [1], Nick Boutos [1], Shailesh Rao [2], George Panayotou [3], Neelam K Venkataramana [4], Gunnar Ronquist [5]

Affiliations

PMID: 39740841 DOI: 10.21873/anticanres.17405

Abstract

Background/aim: Glioblastoma multiforme (GBM) is the most common and aggressive form of primary malignant tumors in the central nervous system of adults. In practice, all patients with GBM experience relapse, and treatment options become limited following first-line therapy. We previously reported a new, successful treatment approach for a GBM patient, implemented in direct conjunction with surgical intervention.

Case report: Here, we present an additional case demonstrating the success of this protocol, along with an overview of its underlying rationale and mechanisms. Following maximal safe tumor resection, our protocol involves the placement of two catheters in the tumor excision bed, connected to drug infusion pumps for continuous administration. The tumor's excision beds are irrigated for 90-120 hours with a slightly alkaline Tris-buffered solution containing L-2,4 diaminobutyric acid, an unnatural amino acid, and Prazosin, a proapoptotic drug widely used as an antihypertensive. Both patients demonstrated marked clinical improvement. Recent contrast-enhanced magnetic resonance imaging revealed no evidence of malignancy, with Case 1 remaining disease-free for seven years and Case 2 for two years of follow-up.

Conclusion: This innovative approach not only enhances local drug delivery but also minimizes systemic side effects, addressing a critical challenge in GBM treatment. These cases highlight the potential of this protocol as an adjunct to standard therapies, offering a promising option for managing inoperable or recurrent GBM.

Keywords: DAB; Glioblastoma; amino acids; cytolysis; review; targeted therapy.