



CNS CASE STUDY

Case 2 :

Innovative Management of Diffuse Midline Glioma, H3K27-altered, CNS WHO Grade 4 with GD2-targeting CAR T Therapy

PATIENT PROFILE

- **Age/Gender:** 22-year-old Male
- **Diagnosis:** Diffuse Midline Glioma, H3K27-altered, CNS WHO Grade 4
- **Initial Presentation:** Symptoms necessitating VP shunt placement for intracranial pressure relief

CLINICAL HISTORY AND PREVIOUS TREATMENT:

March 2023: VP shunt placed, followed by craniotomy and biopsy confirming Diffuse Midline Glioma, H3K27-altered, CNS WHO Grade 4.

Feb–May 2023: IMRT Radiation and Concurrent Temozolomide administered.

Initiation of ONC 201 therapy

First Progression (April 2024): Imaging revealed disease progression.

Proton Therapy administered (April–June 2024) with concurrent chemotherapy.

Second Progression: Bevacizumab added to manage symptoms and tumor-related edema.

CURRENT TREATMENT REGIMEN

GD2-targeting CAR T Therapy initiated following second progression.

Mode of Delivery: Systemic

Baseline



IMAGING FINDINGS

Pre-CAR T Therapy (Left Image):

- Shows a well-defined, hyperintense lesion in the brainstem region, consistent with Diffuse Midline Glioma.
- Surrounding edema is noted, contributing to mass effect on adjacent structures.
- Tumor exhibits irregular borders with central necrosis.

2nd month



IMAGING FINDINGS

Post-CAR T Therapy (Right Image):

- Massive reduction in tumor size and surrounding edema.
- Central necrosis appears more prominent, indicating a treatment response.

“These findings suggest a partial response to GD2-targeting CAR T therapy, warranting ongoing evaluation and follow-up imaging.”

CONCLUSION

GD2-targeting CAR T therapy presents a novel therapeutic avenue for patients with recurrent Diffuse Midline Glioma, H3K27-altered, who have exhausted conventional treatment options.

