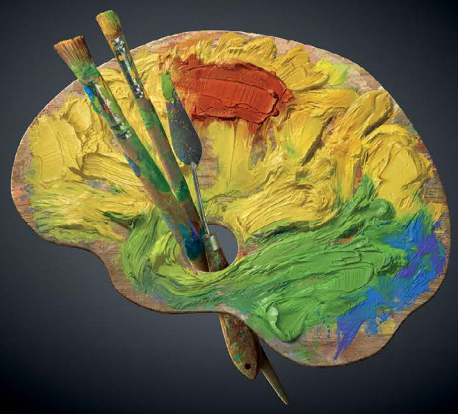
IT'S TIME TO PAINT A BETTER PICTURE OF HIGH GRADE GLIOMA[a]

THE CURRENT LANDSCAPE IN HIGH GRADE GLIOMA



About 15,000 new cases of high grade glioma are expected to be diagnosed in the United States in 2019.[1]

Despite aggressive treatment, virtually all high grade glioma will eventually recur[2]

The standard of care for newly diagnosed high grade glioma has not changed in nearly 15 years.[3]

THE STUPP REGIMEN[4]

SURGERY

FRACTIONATED EXTERNAL BEAM RADIOTHERAPY

TEMOZOLOMIDE

Despite guidelines recommendations, fewer than half of patients receive the full Stupp regimen, including academic settings, such as university hospitals.[5]

Even with this approach, many patients are left wanting more

- Median progression-free survival is about 7 months, and median overall survival (OS) only around 17 months[4,6]
- By one estimate, less than 5% of patients survive for more than 5 years following diagnosis of glioblastoma, and that rate has not changed significantly in almost 30 years[7,8]
- Several factors predict improved survival in patients with glioblastoma[9]
  - High Karnofsky Performance Score
  - Younger age at diagnosis
  - Greater extent of surgical resection
  - Identified biomarkers (O6-methylguanine-DNA methyltransferase [MGMT] promoter methylation, isocitrate dehydrogenase 1 [IDH1] mutation)

[a]High grade glioma includes grade 3 (anaplastic astrocytoma, anaplastic oligodendroglioma, anaplastic ependymoma) and grade 4 (glioblastoma) gliomas, as defined by World Health Organization criteria.

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Recurrent disease poses additional challenges in high grade glioma

After initial treatment, about half of patients treated for high grade glioma will advance to a second-line regimen. About 40% will survive to third-line treatment.[5]

Currently, there are limited options for treating recurrent high grade glioma, each with its own challenges

THERE ARE FEW THERAPEUTIC OPTIONS AVAILABLE AT RECURRENCE

BEVACIZUMAB

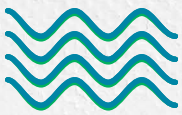
Bevacizumab is among the standard treatments for recurrent glioblastoma in the United States due to favorable radiographic response rates, but it has generally been associated with lack of improvement in survival.[10]

CHEMOTHERAPY

Chemotherapeutic agents are associated with delayed adverse neurological consequences.[11] In recurrent glioblastoma after adjuvant temozolomide, median OS with continuous dose-intense temozolomide was 9.3 months.[12]

SURGERY

Surgical debulking can provide symptom relief[13] and reduce overall tumor burden, but only about 18% of patients undergo surgery in the second-line (surgery alone, 14%; surgery plus temozolomide, 2%; radiation plus surgery, 2%).[5]



TUMOR TREATING FIELDS (TTF)

Alternating electric field therapy is approved for use in recurrent glioblastoma, but it didn't significantly increase OS vs chemotherapy in the recurrent setting (6.6 months vs 6.0 months, p=0.27).[14]

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It is imperative that we continue to work diligently to understand the mechanism of the disease and seek new approaches for those who might benefit. Go to **FUTUREofGLIOMA.com** for informative videos featuring prominent experts in neuro-oncology discussing the challenges of high grade glioma.

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