

# MGMT promoter methylation associated with improved survival for patients with WHO Grade II Gliomas

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Further exploration into the endpoints of the NRG Oncology/RTOG 0424 trial resulted in the discovery that MGMT promoter methylation is an independent prognostic biomarker of high-risk, low-grade glioma treated with temozolomide and radiation. This is the first study of its kind to validate the prognostic significance of MGMT promoter methylation in this patient population and treatment regimen. These findings were published in *JAMA Oncology* on June 28, 2018.

"MGMT [promoter](#) methylation has been known to represent a significant prognostic marker in Glioblastoma for over a decade, but its prognostic value had yet to be validated in High-Risk Low-Grade Glioma (LGG) [patients](#)."

RTOG 0424 was the first study to prospectively validate MGMT promoter methylation in this setting, providing clinicians another tool to risk-stratify LGG patients moving forward," Stated Dr. Chakravarti.

The [initial report](#) on NRG Oncology/RTOG 0424 established a three-year survival benefit for patients with WHO grade II gliomas who received a combination of temozolomide and radiation. This analysis now provides overall survival and progression-free survival outcomes related to the MGMT promoter methylation. The study, designed using the MGMT-STP27 prediction model to calculate MGMT promoter methylation status from Illumina HM-450K data, used univariate

(UVAs) and multivariable analysis (MVAs) Cox proportional hazard models to determine the effect of MGMT status on survival outcomes.

Seventy-five of the 129 eligible trial participants from NRG Oncology/RTOG 0424 had MGMT status available. Fifty-seven (76.0%) of the patients with MGMT status available were methylated, whereas 18 (24.0%) were unmethylated. Results substantiate that MGMT promoter methylation is correlated with progression-free survival and overall survival and should be incorporated into future clinical trial designs.

**More information:** Erica H. Bell et al, Association of MGMT Promoter Methylation Status With Survival Outcomes in Patients With High-Risk Glioma Treated With Radiotherapy and Temozolomide, *JAMA Oncology* (2018). [DOI: 10.1001/jamaoncol.2018.1977](https://doi.org/10.1001/jamaoncol.2018.1977)

Provided by NRG Oncology

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