Neurocognitive function decline but stable QOL in first year after temozolomide-based chemoradiotherapy

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A secondary analysis of the *NRG Oncology* clinical trial NRG-RTOG 0424, which initially reported a 73.1% 3-year overall survival rate, shows a decline in neurocognitive function (NCF) for half of the trial

participants with high risk, low-grade gliomas (HR-LGGs) up to a year after receiving concurrent chemoradiotherapy with temozolomide. However, the analysis also concluded that on average the quality of life (QOL) of patients either remained stable or improved up to a year following temozolomide-based chemoradiotherapy treatment. These results were presented during the Plenary Session at the Society for Neuro-Oncology's (SNO) annual meeting in Phoenix, Arizona.

The Phase II trial, NRG-RTOG 0424, accrued 129 evaluable patients with HR-LGGs to receive daily temozolomide plus concurrent radiotherapy for 6 weeks followed by temozolomide for 12 cycles. Ninety-three patients completed at least one NCF and QOL measurement. NCF tests were performed at the end of treatment, again at 6 months following treatment, and at one year following treatment. Patients who completed NCF and QOL measurements had better clinician rated neurologic function than patients who did not complete the measurements. At 6 months after treatment, 55-59% of trial participants completed NCF and QOL measurements and 54-57% of participants completed measurements at one year following treatment.

"The secondary analysis of NRG-RTOG 0424 show that a large subset of patients are vulnerable to neurocognitive decline after chemoradiotherapy with temozolomide followed by adjuvant temozolomide.Similarly, while general QOL subscales were stable on average, a subset of patients reported diminished brain related QOL over time. Patients in the EORTC High Risk Group and with tumors crossing the midline were at greater risk for these adverse outcomes. These data further support the importance of monitoring neurocognitive function and QOL in trials comparing this treatment regimen with other active treatment regimens such as the CODEL trial (Alliance N0577; EORTC 26081-22086; NRG 1071; NCIC CEC.6) and for further developing our understanding of risk factors for such outcomes," stated Jeffrey S. Wefel, Ph.D., ABPP, of The University of Texas MD Anderson Cancer

Center and lead author of the NRG-RTOG 0424 secondary analysis.

NCF deterioration occurred in 50% of patients at 6 months and 40% of patients at one year post-treatment. These NCF declines were most notable in Hopkins Verbal Learning Test (HVLT) and Trail Making Tests (TMTA and TMTB). Patients who exhibited deterioration in the HVLT at one year post-treatment had a significantly greater decrease in MOS-Cognitive Function (MOS-CF). FACT Emotional and Functional Well-Being subscales improved over time. No NCF test at baseline was independently associated with overall survival.

More information: Wefel JS et al. (2019, November). Neurocognitive function (NCF) and quality of life (QOL) results from a phase II study (RTOG 0424) of temozolomide-based chemoradiotherapy regimen for high risk low-grade gliomas (HR-LGG). Paper presented at the annual meeting of the Society for Neuro-Oncology, Phoenix, AZ

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