Patterns of care and outcomes for use of concurrent chemoradiotherapy over radiotherapy alone for anaplastic gliomas.

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BACKGROUND AND PURPOSE: The role of concurrent chemoradiotherapy (CRT) for anaplastic gliomas is undefined and patterns of care are under-reported. To address the knowledge gap, we examined use of CRT for grade III gliomas compared to radiotherapy (RT) alone.

MATERIAL AND METHODS: In an observational study design cohort from the National Cancer Database, we identified 4437 adult patients receiving surgery followed by either CRT or RT for supratentorial anaplastic glioma in 2003-2011. Univariable and multivariable logistic regression analyses were used to assess factors associated with use of CRT. Overall survival (OS) was assessed by the Kaplan-Meier analysis with log-rank tests, Cox proportional hazards regression modeling, and propensity score matching.

RESULTS: Receipt of CRT (vs. RT) was associated with recent year of diagnosis (OR for 2011 vs. 2003) 3.36, 95% CI 2.49-4.54) and having astrocytoma (vs. oligodendroglioma) (OR 1.37, 95% CI 1.15-1.63). Patients receiving CRT had a lower adjusted hazard of death (hazard ratio 0.72, 95% CI 0.65-0.79). Outcomes were worse for patients ≥60 (HR 6.94, 95% CI 6.09-7.91) and astrocytomas (HR 2.08, 95% CI 1.85-2.34).

CONCLUSION: Use of concurrent CRT is associated with more recent year of diagnosis and improved survival relative to RT alone.

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