ABSTRACT

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# Clinical and survival characteristics of primary and secondary gliosarcoma patients.

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PURPOSE: Gliosarcoma (GS) is classified by the World Health Organization as a subtype of glioblastoma with sarcomatous features. GS have a propensity to metastasize, as opposed to other gliomas, with lower 5-year survival rates than GBM patients. In this study, we identified differences in survival between patients with primary and secondary GS.

METHODS: We retrospectively identified patients who presented at the MD Anderson Cancer Center with a pathology-confirmed diagnosis of GS. We defined overall survival (OS) from the date of pathological diagnosis of primary GS (from sarcomatous change for secondary GS). We defined progression-free survival (PFS) from the date of GS chemoradiation completion to radiographic disease progression. We used Kaplan-Meier survival estimates and the log-rank test to compare OS and PFS between primary and secondary GS. We used univariable Cox proportional hazard regression to assess differences in OS & PFS by various characteristics.

RESULTS: We identified 94 GS patients; 70 had primary disease and 24 secondary. Molecular analysis of GS tumor samples revealed that 47.1% were GFAP positive, 38.5% S-100 positive, and 83.7% reticulin-positive. Among the tested samples, 3.8% had IDH and 73.1% had TP53 mutations. The median OS for all patients was 16.8 months. Median OS from the pathological diagnosis of GS was 17.3 months for primary and 10.2 months for secondary GS. Median OS for secondary GS was 28.9 months from initial diagnosis of the primary neoplasm.

CONCLUSIONS: Our study is the largest single institution evaluation of GS and provides insight into patterns of survival for GS.

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