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EPR25-124: Epidemiology of Giant Cell Glioblastoma: A Surveillance, Epidemiology, and End Results (SEER) Analysis

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Background: Giant Cell Glioblastoma (GCG) accounts for only 5% of all the glioblastomas and less than 1% of all the brain tumors. Characterized by frequent TP53 mutations and an abundance of bizarre multinucleated giant cells with eosinophilic cytoplasm, GCG offers a slightly better prognosis than Glioblastoma Multiforme. Symptom spectrum is similar to that of most brain tumors. There is limited data on GCG due to its rarity; therefore, the purpose of this study is to better understand the nature of this tumor. **Method:** Giant cell glioblastoma cases were extracted, using the ICD code 9441/3, from SEER database Research Plus Data, 17 Registries, Nov 2023 Sub (2000-2021). The analysis was stratified based on age, sex, race, laterality, primary site labelled, stage, median household income inflation adjusted to 2022, and treatment types involved. Survival curves were compared using Log-Rank test (GraphPad Prism). **Results:** Total 514 cases were found. Median age of diagnosis was 59.5 years, and the overall median of survival (MoS) was 11 months. Of these cases, 57% were males and 43% were females. Racial distribution was observed as: White (72.96%), Hispanic (14.01%), Asian/Pacific Islander (6.81%), Black (5.84%), and Alaskan/Native American and unknown race (<1%). MoS based on age was 0-30 years (23), 31-60 years (16), 60+ years (6) (p <0.0001). Gender based survival was 11 for males and 13 for females (p 0.0192). Race and income specific analysis showed no statistical difference. Anatomically, MoS was high for brainstem (42), and frontal lobe (14); while, low for overlapping lesions (8), cerebellum (7.5), and spinal cord (7) (p 0.0402). Survival based on laterality was 15 for left, and 11 for right/bilateral/unpaired site (p 0.0049). Stage specific MoS was localized (14), regional (7) and distant disease (7) (p 0.0010). Comparison based on treatment types revealed: surgery (13) vs no surgery (4) (p <0.0001), chemotherapy (15) vs no chemotherapy (4) (p <0.0001) and radiotherapy (14) vs no XRT (2) (p <0.0001). **Conclusions:** Giant cell glioblastoma is an extremely rare neoplasm, with only 514 cases identified between 2000-2021. Our analysis concluded that males and Caucasians are most commonly affected. Improved survival outcomes were associated with younger age, female gender, earlier stage, left-sided tumor, brainstem or frontal lobe involvement, and surgical or non-surgical treatment options. Whereas, race and income had no influence.