

National Cancer Database Analysis of Outcomes in Patients Diagnosed with Glioblastoma

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Background

Glioblastoma is one of the aggressive types of cancer that can occur in the brain or in spinal cord. There has been progress in understanding in recent years, however the prognosis is still very poor. Treatment of glioblastoma requires a multidisciplinary approach based on understanding the pathophysiology of the disease, which can eventually lead to a better prognosis and quality of life.

Objective

The purpose of the study was to describe the demographics for the patients diagnosed with glioblastoma and evaluate association of patient's characteristics, socio-economic status, and treatment with overall survival (OS) and with percent survival after 1, 2 and 5-years of diagnosis.

Method

We analyzed the National Cancer Database (NCDB), which provides broad and detailed information on demographic characteristics, treatment modalities, and survival outcome for patient diagnosed with glioblastoma. Descriptive statistics, Kaplan-Meier curve, and Cox proportional hazard regression were used to analyze the data. For all statistical analyses SAS9.4 SAS Institute, Cary, NC was used.

Results

A total of 124,282 patients were identified with diagnosis of glioblastoma from 2004 through 2016. The study population included patients with histology codes (ICD-O3) 9440, 9441, and 9442 and tumor sites for CNS and brain (C71.0 - C71.9 and C72.0-C72.3). The data with missing vital status (dead, alive) was excluded from the analysis. There were 57.4% male, 87% non-Hispanic white (NHW), 5.5% non-Hispanic black (NHB), 5% Hispanic and rest were from 'other' race category

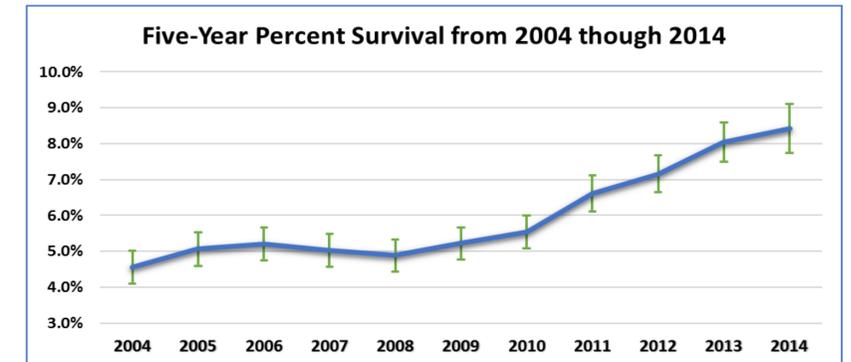


Figure 2. Survival probability for Giant cell glioblastoma, Glioblastoma and for Gliosarcoma

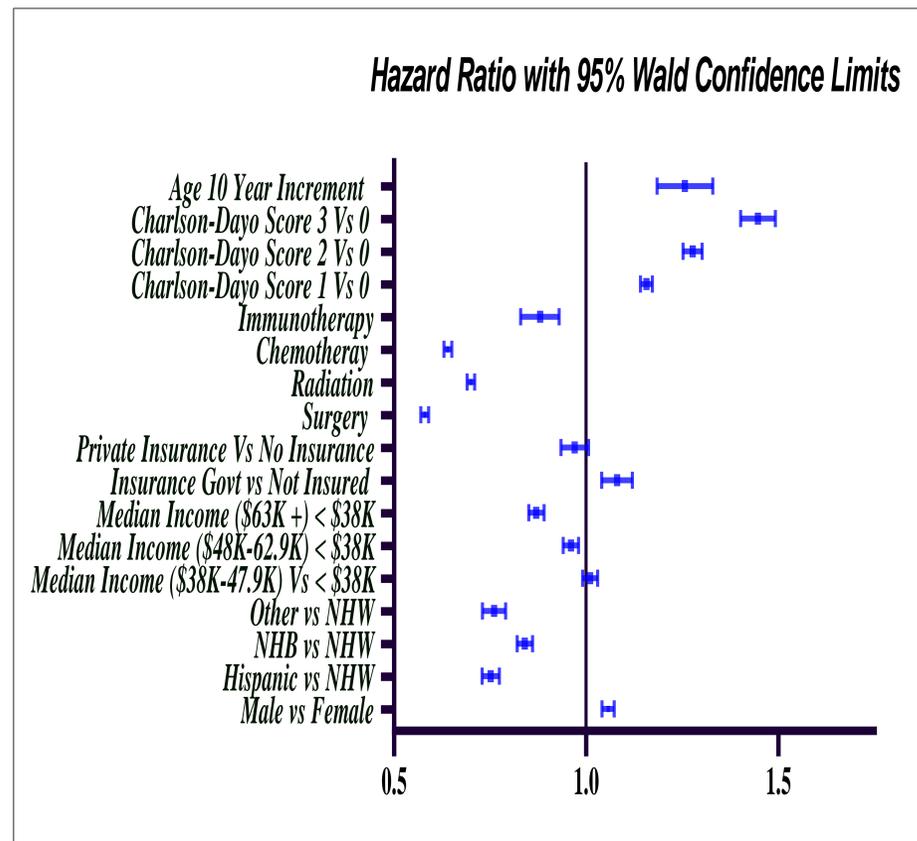


Figure 1. Hazard Ratio of mortality for patients diagnosed with Glioblastoma

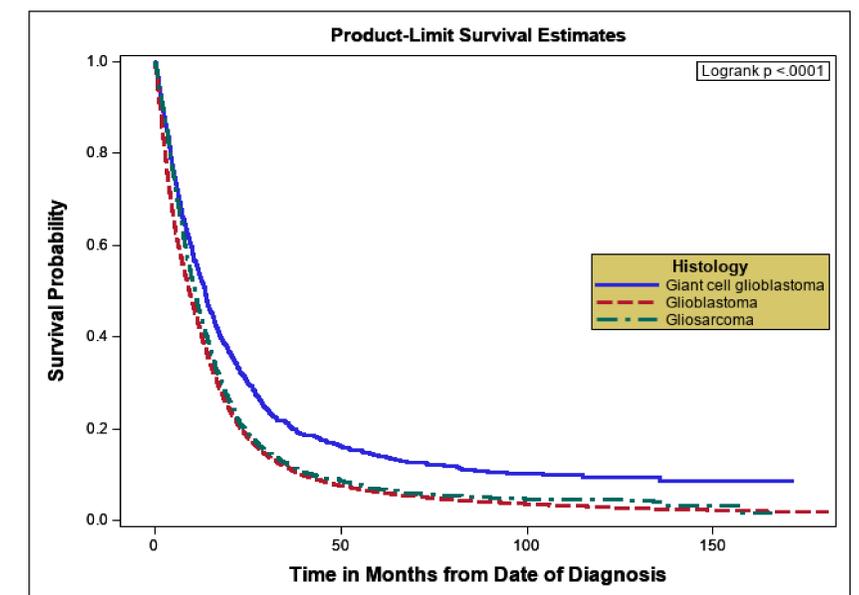


Figure 3. Survival probability for Giant cell glioblastoma, Glioblastoma and for Gliosarcoma

Conclusion

Female, Hispanic and Asian and pacific islanders and younger patients had better survival. In addition, patients who underwent treatments such as surgery, chemotherapy, immunotherapy, hormonal therapy and radiation has better survival probability