

ABSTRACT

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Association between a prior cancer history and prognosis in adult patients with high-grade glioma.

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Patients with a prior cancer history are often excluded from clinical trials. This study aimed to investigate the prognostic impact of prior cancer history on patients with high-grade glioma. Data of patients with high-grade glioma as the first or second primary malignancy were obtained from the Surveillance, Epidemiology, and End Results database. Propensity score matching (PSM) was performed to balance the heterogeneity baseline characteristics. The survivals of patients with or without prior cancers were analyzed. A total of 46,200 patients were included in this study, 2471 (5.3 %) of whom carried a prior cancer history. Prostate (37.7 %), breast (12.2 %), colon and rectal (7.9 %), and skin (6.9 %) cancers were the most common types of prior cancers. Overall survival rates were similar between patients with and without a prior cancer history (hazard ratio [HR], 1.02; 95 % confidence interval [CI], 0.96-1.08; $P = 0.525$). However, a prior cancer history served as a protective factor against glioma-specific mortality (sub-distribution HR = 0.90; 95 % CI, 0.84-0.96; $P = 0.001$) in comparison with having no prior cancer history. The subgroup stratified by time intervals and types of prior cancer history showed that a prior cancer history was not a significant prognostic factor for survival in patients, except for breast cancers within 5 years and prostate cancers over 5 years. Our study shows that except for patients with high-grade gliomas with a history of stable tumors, the inclusion of patients with a prior history of tumors in clinical trials requires careful consideration.

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