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Improved survival time trends for glioblastoma using the SEER 17 population-based registries.

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Abstract

The EORTC/NCIC 22981/26981 study demonstrated an improvement in median overall survival (OS) from 12.1 to 14.6 months in patients with glioblastoma (GBM) who received temozolomide with post-operative radiotherapy (RT). The current study was performed to determine if those results translated into a survival benefit in a population-based cohort. Patients diagnosed between 2000 and 2006 with a GBM who underwent surgery and post-operative RT were selected from the Surveillance, Epidemiology and End Results database. Patients were grouped into time periods: 2000-2001, 2002-2003, 2004 and 2005-2006 (which represented those treated after the EORTC/NCIC trial presentation in 2004). Relative survival (RS) was estimated by the Kaplan-Meier method, and Cox multivariable regression modeling was used to estimate proportional hazard ratios (HR). Over time, there was improvement in the median and 2-year RS of 12 months and 15% for 2000-2001, 13 months and 19% for 2002-2003, 14 months and 24% for 2004, and 15 months and 26% for 2005-2006 ($P < 0.0001$ compared to 2000-2001 and 2002-2003; $P = 0.07$ compared to 2004). The estimated adjusted HR showed that patients diagnosed in 2005-2006 had significantly improved survival when compared to patients diagnosed in 2000-2001 (HR = 0.648, 95% CI 0.604-0.696). The median and 2 year RS of 15 months and 26% in 2005-2006 was similar to the median and 2 year OS of 14.6 months and 26% seen in the EORTC/NCIC phase III study. These results are encouraging and suggest that the current treatment of glioblastoma nationwide is now associated with an improved survival compared to previous time cohorts.

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