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Surgical outcomes for older patients with glioblastoma multiforme: preoperative factors associated with decreased survival.

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Abstract

Object As the population ages, the incidence of glioblastoma multiforme (GBM) among older patients (age \geq 65 years) will increase. Older patients, unlike their younger counterparts, are not often offered aggressive surgery because of their age, comorbidities, and potential inability to tolerate surgery. The goal of this study was to identify preoperative factors associated with decreased survival for older patients who underwent resection of a GBM. The identification of these factors may provide insight into which patients would benefit most from aggressive surgery. Methods All patients older than 65 years who underwent nonbiopsy resection of an intracranial GBM at a single institution between 1997 and 2007 were retrospectively reviewed. Factors associated with overall survival were assessed using multivariate proportional hazards regression analysis after controlling for peri- and postoperative factors known to be associated with outcome (extent of resection, carmustine wafer implantation, temozolomide chemotherapy, and radiation therapy). Variables with $p < 0.05$ were considered statistically significant. Results A total of 129 patients with an average age of 73 \pm 5 years met the inclusion/exclusion criteria. At last follow-up, all 129 patients had died, with a median survival of 7.9 months. The preoperative factors that were independently associated with decreased survival were Karnofsky Performance Scale (KPS) score less than 80 ($p = 0.001$), chronic obstructive pulmonary disease ($p = 0.01$), motor deficit ($p = 0.01$), language deficit ($p = 0.005$), cognitive deficit ($p = 0.02$), and tumor size larger than 4 cm ($p = 0.002$). Patients with 0, 1, 2, 3, 4, 5, and 6 of these factors had statistically different survival times, where the median survival was 9.2, 5.5, and 4.4 months, respectively. In log-rank analysis, the median survival for Group 1 was significantly longer than that for Group 2 ($p = 0.004$) and Group 3 ($p < 0.0001$), while Group 2 had longer survival than Group 3 ($p = 0.02$). Conclusions Older patients with an increasing number of these factors may not benefit as much from aggressive surgery as patients with fewer factors. This may provide insight into identifying which patients older than 65 years of age may benefit from aggressive surgery.

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