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Overall survival of newly diagnosed glioblastoma patients receiving carmustine wafers followed by radiation and concurrent temozolomide plus rotational multiagent chemotherapy.

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BACKGROUND:: Glioblastoma multiforme (GBM), the most lethal type of brain tumor, has a 1-year median survival. The effect of carmustine wafers on the survival of newly diagnosed GBM patients treated with radiotherapy (RT) and concurrent temozolomide (TMZ) plus RT plus rotational chemotherapy was investigated. METHODS:: An institutional review board-approved retrospective study was conducted in 85 newly diagnosed GBM patients who received surgical resection with and without carmustine wafers followed by RT and concurrent TMZ plus rotational chemotherapy. Treatment group comparisons were conducted using the log-rank test. Survival experience of the Duke cohort was examined within specific patient subgroups defined by the original Radiation Therapy Oncology Group (RTOG) recursive partition analysis (RPA) class and compared with the European Organization for Research and Treatment of Cancer (Stupp) and RTOG trial. RESULTS:: Overall 1- and 2-year survival for the noncarmustine wafer cohort were 69% and 29%, respectively, with a median survival of 72.7 weeks. One- and 2-year survival for the carmustine wafer cohort were 81% and 47%, with median survival of 89.5 weeks. Carmustine wafer was not an independent predictor (P = .110) of survival after adjustment for RPA class. The proportion of patients in the carmustine wafer cohort who lived longer than predicted based upon Stupp regimen results was significantly greater than 0.5 (P<.006); similar results based upon the RTOG trial data were observed (P < .001). CONCLUSIONS:: Carmustine wafer with concurrent TMZ and radiation followed by rotational chemotherapy is a well tolerated, effective therapy, and has a survival benefit compared with radiation alone. Prospective randomized trials are needed to rigorously compare the carmustine wafer regimen to the Stupp and postradiation multimodality regimens. Cancer 2009. (c) 2009 American Cancer Society.

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