Oligodendroglioma resection: a Surveillance, Epidemiology, and End Results (SEER) analysis.

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Abstract

OBJECTIVE The available evidence suggests that the clinical benefits of extended resection are limited for chemosensitive tumors, such as primary CNS lymphoma. Oligodendroglioma is generally believed to be more sensitive to chemotherapy than astrocytoma of comparable grades. In this study the authors compare the survival benefit of gross-total resection (GTR) in patients with oligodendroglioma relative to patients with astrocytoma. METHODS Using the Surveillance, Epidemiology, and End Results (SEER) Program (1999-2010) database, the authors identified 2378 patients with WHO Grade II oligodendroglioma (O2 group) and 1028 patients with WHO Grade III oligodendroglioma (O3 group). Resection was defined as GTR, subtotal resection, biopsy only, or no resection. Kaplan-Meier and multivariate Cox regression survival analyses were used to assess survival with respect to extent of resection. RESULTS Cox multivariate analysis revealed that the hazard of dying from O2 and O3 was comparable between patients who underwent biopsy only and GTR (O2: hazard ratio [HR] 1.06, 95% confidence interval [CI] 0.73-1.53; O3: HR 1.18, 95% CI 0.80-1.72). A comprehensive search of the published literature identified 8 articles without compelling evidence that GTR is associated with improved overall survival in patients with oligodendroglioma. CONCLUSIONS This SEER-based analysis and review of the literature suggest that GTR is not associated with improved survival in patients with oligodendroglioma. This finding contrasts with the documented association between GTR and overall survival in anaplastic astrocytoma and glioblastoma. The authors suggest that this difference may reflect the sensitivity of oligodendroglioma to chemotherapy as compared with astrocytomas.