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# Clinical predictors of overall survival in elderly oligodendroglioma patients: A Surveillance, Epidemiology, and End Results (SEER) database analysis

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## Abstract

**Objective:** Oligodendrogliomas are typically benign tumors that arise within the white matter tracts of the cerebral hemispheres. Surgical resection, radiotherapy (RT), and chemotherapy (CT) are utilized to prolong survival in patients diagnosed with these tumors. Older patients, however, suffer from various comorbidities that may make surgical resection less feasible and less effective in managing this disease. In this retrospective study, we assessed the survival outcomes for sexagenarian and older patients and the impact of surgical intervention, RT, and CT on overall survival (OS).

**Methods:** The Surveillance, Epidemiology, and End Results (SEER) database was queried to identify all patients  $\geq 60$  years of age diagnosed with oligodendrogliomas between 2000 and 2020. The patient cohort was dichotomized into the sexagenarian (60-69 years of age) and older ( $\geq 70$  years of age) patient subgroups. Demographic, clinical, and survival information was collected for these patients, and baseline comparison of the two groups of interest was conducted. Bivariate Kaplan-Meier analyses were used to assess the effects of gross total resection (GTR), RT, and CT on OS in sexagenarian and older patients. To adjust for confounding interactions between clinical predictors and OS, Cox proportional-hazards models were employed.

**Results:** 852 oligodendroglioma patients were identified-564 sexagenarian patients and 288 older patients. Multivariable regression demonstrated that older patients were less likely to undergo CT compared to sexagenarian patients (OR: 0.534, 95 % CI: 0.395 - 0.720,  $p < 0.001$ ). Multivariable Cox proportional-hazards analysis found that sexagenarian patients in whom GTR was achieved had an increased likelihood of survival (HR: 0.699, 95 % CI: 0.517 - 0.946,  $p = 0.020$ ). However, an analogous analysis found that GTR did not increase survival odds in older oligodendroglioma patients (HR: 0.813, 95 % CI: 0.571 - 1.157,  $p = 0.250$ ).

**Conclusion:** In this retrospective study, we found that although sexagenarian and older oligodendroglioma patients were similarly offered GTR, only sexagenarian patients appeared to derive a survival benefit. These findings suggest that the role of aggressive surgical intervention in older patients may warrant further consideration.

**Keywords:** Elderly; Oligodendroglioma; SEER; Surgery; Survival.

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