

## ABSTRACT

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Adjuvant Chemoradiation therapy Versus Chemotherapy Alone for Resected Oligodendroglioma: A Surveillance, Epidemiology and End Results (SEER) Analysis.

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**OBJECTIVE:** The benefit of postoperative adjuvant therapy for survival of oligodendrocyte glioma remains unclear. In this study, we compared the effect of chemoradiation therapy (CRT) and chemotherapy (CT) alone in patients who underwent resection. We aim to identify which adjuvant therapy provides more survival benefits.

**METHODS:** We identified patients who underwent oligodendroglioma resection in the SEER database. A multivariate Cox regression analysis was used to evaluate the factors affecting survival rates. We used a propensity matching analysis to minimize selection bias in each group. We performed subgroup analyses based on patients' clinical characteristics.

**RESULTS:** This study identified 1,826 patients who received adjuvant CT (n = 503) or adjuvant CRT (n = 1,323). On multivariate analysis, elderly, white and other race, temporal lobe and parietal lobe tumor site were independent risk factors for improved Overall Survival (OS). After 1:1 propensity match, we included 501 patients who received CT and 501 with CRT. Patients in CT group showed improved overall survival rate compare to those who received CRT (median OS: 146 months vs 111 months). Subgroup analysis showed that improved overall survival in CT group was more significant in patients who were younger or older, Male or female, white race, frontal lobe and parietal lobe tumor site, smaller tumor size( $\leq 4$ cm), and with gross-total resection (GTR)( $P < 0.05$ ).

**CONCLUSIONS:** In patients with resected oligodendroglioma, adjuvant CT is associated with better survival compared to adjuvant CRT. The benefit was more significant in patients with younger and older, Male and female, white race, frontal lobe and parietal lobe tumor site, smaller tumor size( $\leq 4$ cm), and with GTR.

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