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Clinical predictors of overall survival in very elderly meningioma patients: a surveillance, epidemiology, and end results (SEER) database analysis

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Abstract

Objective: Surgical resection is the gold standard of management for symptomatic intracranial meningiomas. However, surgical intervention may be contraindicated in very elderly patients. In this study, we assessed the survival outcomes for elderly and very elderly patients and the impact of surgical intervention [e.g., subtotal resection (STR) and gross total resection (GTR)] and radiotherapy (RT).

Methods: The Surveillance, Epidemiology, and End Results (SEER) database was queried to identify all patients ≥ 65 years of age diagnosed with intracranial meningiomas between 2000 and 2020. Baseline demographics, clinical characteristics, and survival outcomes were compared between elderly (65-79 years) and very elderly (80 + years) patients.

Results: 4,052 intracranial meningioma patients were identified- 3,462 elderly patients and 590 very elderly patients. Very elderly patients were less likely to undergo GTR compared to elderly patients (OR: 0.756, 95% CI: 0.631-0.905, $p = 0.002$) and less likely to receive RT (OR: 0.441, 95% CI: 0.294-0.642, $p < 0.001$). Achievement of GTR in very elderly patients did not decrease the risk of death (HR: 1.003, 95% CI: 0.682-1.475, $p = 0.987$). However, RT was associated with decreased risk of death in very elderly patients (HR: 0.212, 95% CI: 0.052-0.860, $p = 0.030$).

Conclusion: In this retrospective study, we found pursual of aggressive surgical intervention in very elderly patients was not associated with increased mortality. Despite very elderly patients being much less likely to be prescribed radiotherapy, the administration of RT significantly increased overall survival, suggesting a greater role for radiotherapy in managing intracranial meningiomas in the very elderly population.

Keywords: Meningioma; SEER; Surgery; Survival; Very elderly.

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