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Optimal treatment regimen for very elderly patients with atypical meningioma: an analysis of survival outcomes using the National Cancer Database (NCDB)

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Abstract

Purpose: We assess the efficacy of different surgical resection types, radiotherapy, systemic therapy on overall survival in very elderly patients (age > 80) with intracranial atypical meningioma in contrast with their elderly (65-80) counterparts.

Methods: Patients > 65 years old with intracranial atypical meningiomas surgically resected and catalogued via the National Cancer Database were included. Cox proportional hazards models were developed to assess the association between surgical resection type, radiotherapy and systemic therapy with OS while controlling for sex, race, ethnicity, facility type, income, tumor size and CDCC score.

Results: 1747 elderly patients and 382 very elderly patients were included. 61.70% elderly patients and 58.90% very elderly patients received GTR. 26.50% elderly patients and 14.13% very elderly patients received radiotherapy. In multivariate analysis, subtotal resection is associated with worse survival (HR 1.28, $p < 0.01$) and radiotherapy is associated with improved survival (HR 0.76, $p < 0.01$). Systemic therapy was not associated with changes in survival outcomes (HR 1.17, $p = 0.79$). Using subgroup analysis, gross total resection is associated with better survival outcomes in both elderly and very elderly cohorts. Radiotherapy was not associated with improved survival (HR 0.85, $p = 0.11$) for patients between 65 and 80 years old, but was associated with improved survival (HR 0.51, $p < 0.01$) for patients > 80 years old.

Conclusion: GTR provides survival advantage in both elderly and very elderly cohorts. Radiotherapy provides survival benefits for very elderly patients even though very elderly patients are less likely to receive radiotherapy. Very elderly patients may benefit from more aggressive management in the treatment of atypical meningiomas.

Keywords: Atypical meningioma; Chemotherapy; Overall survival; Radiotherapy; Resection; Very elderly.

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