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Atypical and anaplastic meningiomas in the later decades of life: A national cancer database analysis

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Abstract

Purpose: We conducted a National Cancer Database (NCDB) study to investigate the epidemiological characteristics and identify predictors of outcomes associated with geriatric meningiomas.

Methods: The NCDB was queried for adults aged 60-89 years diagnosed between 2010 and 2017 with grade 2 and 3 meningiomas. The patients were classified into three age groups based on their age: 60-69 (hexagenarians), 70-79 (septuagenarians), and 80-89 (octogenarians). The log-rank test was utilized to compare the differences in overall survival (OS). Univariate and multivariate Cox proportional hazards regressions were used to evaluate the mortality risk associated with various patient and disease parameters.

Results: A total of 6585 patients were identified. Hexagenarians were the most common age group (49.8%), with the majority of meningiomas being classified as grade 2 (89.5%). The incidence of high-grade meningiomas increased in all age groups during the study period. Advanced age, male sex, black race, lower socioeconomic status, Charlson-Deyo score ≥ 2 , and higher tumor grade were independent factors of poor survival. Among the modes of treatment, the extent of surgical resection, adjuvant radiotherapy, and treatment at a noncommunity cancer program were linked with better outcomes.

Conclusion: In geriatric patients with high-grade meningiomas, the greater extent of surgical resection and radiotherapy are associated with improved survival. However, the management and outcome of geriatric patients with higher-grade meningiomas are also associated with several socioeconomic factors.

Keywords: Anaplastic meningioma; Atypical meningioma; Geriatric; High-grade meningiomas; NCDB.

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