



Low-Grade Gliomas in Older Patients: Do Mutations Drive Outcomes?

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Introduction

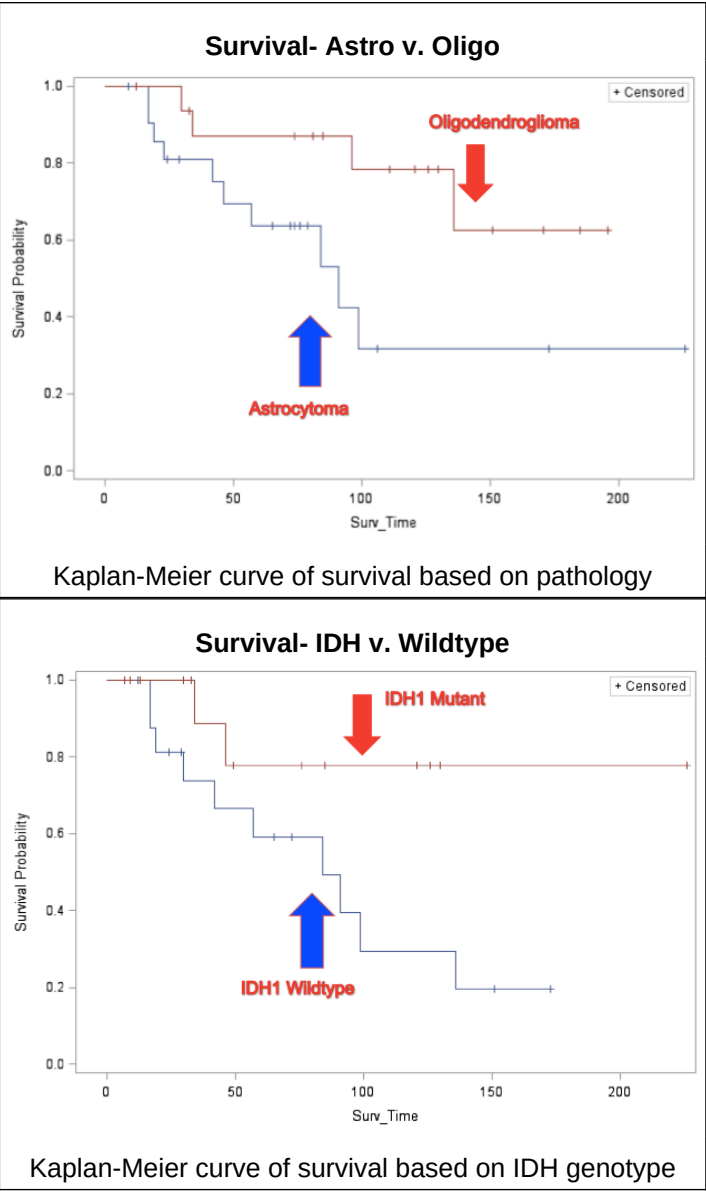
Despite growing knowledge about the molecular genetics and prognosis of low-grade gliomas, management strategy for these lesions remains unclear, especially in older patients. Determining optimal treatment for patients 50 and older is difficult given the relative rarity of these lesions and limited of information on IDH1 mutation status in this population.

Methods

We reviewed the records of patients age > 50 years with pathologically confirmed WHO grade II gliomas treated at Massachusetts General Hospital between 1995 and 2013.

Results

Median survival for the entire group (N = 43, median age 56 years, range 50 to 77 years) was 11.3 years with 5- and 10-year survival rates of 74.8% and 56.3%, respectively. On direct comparison, patients with oligodendrogliomas had significantly higher overall survival than patients with astrocytomas, with five-year and ten-year survivals of 87.1% v. 63.6%, and 78.4% v. 31.8% (p=0.04). Median overall survival for patients with astrocytomas was 7.6 years, whereas median overall survival for patients with oligodendrogliomas had not yet been reached at time of data collection. For patients with IDH1 mutations (n=14), overall survival was increased compared to patients without the mutation (n=17). Five-year and 10-year overall survivals were 77.8% and 77.8% for IDH1-mutant patients and were 59.1% and 29.6%, respectively, for IDH1-wildtype patients (p=0.06). Younger age at diagnosis (p=0.0019, Hazard Ratio (HR)=1.18), tumors amenable to resection beyond biopsy (p=0.0055, HR=0.073), and oligodendroglioma pathology (p=0.022, HR=0.179) were associated with significantly longer median survival on multivariate analysis.



Conclusions

Similar to younger populations, oligodendroglioma pathology and any tumor resection beyond biopsy offers improved survival in older patients with low-grade glioma. IDH-1 mutation is less common than in younger patients, but is associated with improved overall survival. Further studies are needed to clarify optimal treatment strategy for elderly patients with low-grade gliomas and known IDH genotype.

Learning Objectives

By the conclusion of this session, participants should be able to 1) describe the importance of IDH1 mutation in survival for low-grade gliomas 2) discuss, in small groups, the treatment strategies for for low-grade gliomas in elderly patients and 3) identify

References

1.Shaw E, Arusell R, Scheithauer B, et al. Prospective randomized trial of low- versus high-dose radiation therapy in adults with supratentorial low-grade glioma: initial