Brainstem high grade glioma

Brainstem high grade glioma, excluding classic diffuse intrinsic pontine gliomas (DIPGs), are a very rare, heterogeneous group of neoplasms that have been infrequently described in the literature.

see Pediatric brainstem high grade glioma

2014

A total of 34 patients, consisting of 22 anaplastic astrocytomas (AAs) and 12 glioblastomas (GBMs). The overall median survival for all patients was 25.8 months, with patients having GBMs experiencing significantly worse survival (12.1 vs. 77.0 months, p = 0.0011). The majority of tumors revealed immunoreactivity for EGFR (93.3 %) and MGMT (64.7 %). Most tumors also exhibited chromosomal abnormalities affecting the loci of epidermal growth factor receptor (92.9 %), MET (100 %), PTEN (61.5 %), and 9p21 (80 %). AAs more commonly appeared diffusely enhancing (50.0 vs. 27.3 %) or diffusely nonenhancing (25.0 vs. 0.0 %), while GBMs were more likely to exhibit focal enhancement (54.6 vs. 10.0 %). Multivariate analysis revealed confirmed histopathology for GBM to significantly affect survival (HR 4.80; 95 % CI 1.86-12.4; p = 0.0012). In conclusion, adult malignant BSGs have an overall poor prognosis, with GBM tumors faring significantly worse than AAs. As AAs and GBMs have differing imaging characteristics, tissue diagnosis may be necessary to accurately determine patient prognosis and identify molecular characteristics which may aid in the treatment of these aggressive tumors [1)]

Overall median survival in the cohort of 240 adult patients was 7 months, with 1, 2, 5 and 10 year survival rates of 33.2%, 19.7%, 10.1%, and 8.3%, respectively. Age >50years (hazard ratio [HR] 1.98, 95% confidence interval [CI] 1.45-2.70, p<0.001) and grade IV versus grade III tumor (HR 1.61, 95% CI 1.15-2.26, p=0.006) were associated with statistically significant increased mortality in multivariate analyses. Surgical intervention trended toward association with lower mortality (HR 0.68, 95% CI 0.47-1.01, p=0.055). The findings suggest that in patients with high-grade brainstem astrocytoma (HGBSA), younger age and lower-grade histology are associated with better prognosis. Surgical intervention trended towards a significant association with better outcome, while radiation treatment was not associated with a statistically significant benefit in survival [2)].

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In Seven elderly patients, the median age at onset was 65 years, with the majority of patients being male (71.4%) and Caucasian (85.7%). The median duration of symptoms prior to presentation was 0.5 months, with the most common symptoms being facial weakness, blurry vision, headache, and extremity weakness. Tumors were most commonly located in the pons (85.7%), with one tumor being located in the tectal plate. Five of seven (71.4%) patients underwent biopsies, with two patients undergoing partial resections. Following tissue diagnosis, patients received radiation therapy and concurrent temozolomide, followed by additional chemotherapeutics upon progression. Side effects as a result of treatment were seen in three patients and all involved reversible hematological complications such as neutropenia and thrombopenia. The median time to progression was 6.7

months and the median overall survival was 13.5 months. While malignant BSG in elderly patients are aggressive gliomas with an overall poor prognosis, these patients are able to safely undergo aggressive chemoradiotherapy, resulting in improved survival. Resection may be considered for select patients in which the tumor is mostly exophytic, near the brainstem surface, and easily accessible [3].

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