Metastatic low-grade gliomas in children: 20 years' experience at St. Jude Children's Research Hospital.

Chamdine O, Broniscer A, Wu S, Gajjar A, Qaddoumi I.

Abstract

BACKGROUND: Patients with low-grade gliomas (LGG), which are the most common childhood brain tumors, have excellent long-term survival. Dissemination of LGG is rare. Robust data on the incidence, presentation, patterns of dissemination, disease behavior, outcome, and best-management approaches do not exist. We describe 20 years of follow-up of children with metastatic LGG.

PROCEDURE: Data collected during the period 1990-2010 were retrospectively reviewed for the following inclusion criteria: diagnosis of metastatic LGG, age younger than 21 years at initial diagnosis, and magnetic resonance imaging of the brain and/or spine at diagnosis and/or follow-up. Patient demographics, pathology, treatment modalities, and outcome were reviewed.

RESULTS: Of 599 patients with LGG, 38 (6%) had metastatic disease at either diagnosis or follow-up. Most tumors (87%) were located in the brain, and half of the patients had metastatic disease at presentation. The most common diagnosis was pilocytic astrocytoma (55%). Chemotherapy was the most common initial treatment modality. Median survival of the group was 6.2 years (range, 0.1-16.9 years). Fifteen (40%) patients died at a median of 6 years from diagnosis (range, 0.8-15 years). Overall survival at 5, 10, and 15 years was 80.7 ± 6.6%, 63.0 ± 10.2%, and 50.9 ± 16.0%, respectively.

CONCLUSION: This study describes the longest follow-up of children with metastatic LGG. LGG is underestimated and entails major morbidity and mortality. Prospective studies are needed to learn the true incidence, study the biology, and determine the best approaches to diagnosis, treatment, and follow-up. Pediatr Blood Cancer 2015; 9999:1-9. © 2015 Wiley Periodicals, Inc.

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KEYWORDS: long-term follow-up; low-grade glioma; metastatic; overall survival

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