ABSTRACT

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Clinical and radiographic characteristics of diffuse astrocytic glioma, IDH-wildtype, with molecular features of glioblastoma: a single institution review.

Grogan D(1), Bray DP(2), Cosgrove M(2), Boucher A(2), Erwood A(2), Linder DF(3), Mendoza P(4), Morales B(4), Pradilla G(2), Nduom EK(2), Neill S(4), Olson JJ(2), Hoang KB(5).

Author information:
(1)The Medical College of Georgia at Augusta University, Augusta, GA, USA.
(2)Department of Neurosurgery, Emory University School of Medicine, 1365 Clifton Road, Atlanta, GA, 30322, USA.
(3)Division of Biostatistics, Medical College of Georgia at Augusta University, Augusta, GA, USA.
(4)Department of Pathology & Laboratory Medicine, Emory University School of Medicine, Atlanta, GA, USA.
(5)Department of Neurosurgery, Emory University School of Medicine, 1365 Clifton Road, Atlanta, GA, 30322, USA. kimberly.bojanowski.hoang@emory.edu.

PURPOSE: Genetic analyses of gliomas have identified key molecular features that impact treatment paradigms beyond conventional histomorphology. Despite at-times lower grade histopathologic appearances, IDH-wildtype infiltrating gliomas expressing certain molecular markers behave like higher-grade tumors. For IDH-wildtype infiltrating gliomas lacking traditional features of glioblastoma, these markers form the basis for the novel diagnosis of diffuse astrocytic glioma, IDH-wildtype (wt), with molecular features of glioblastoma (GBM), WHO grade-IV (DAG-G). However, given the novelty of this approach to diagnosis, literature detailing the exact clinical, radiographic, and histopathologic findings associated with these tumors remain in development.

METHODS: Data for 25 patients matching the DAG-G diagnosis were obtained from our institution's retrospective database. Information regarding patient demographics, treatment regimens, radiographic imaging, and genetic pathology were analyzed to determine association with clinical outcomes.

RESULTS: The initial radiographic findings, histopathology, and symptomatology of patients with DAG-G were similar to lower-grade astrocytomas (WHO grade 2/3). Overall survival (OS) and progression free survival (PFS) associated with our cohort, however, were similar to that of IDH-wt GBM, indicating a more severe clinical course than expected from other associated features (15.1 and 5.39 months respectively).

CONCLUSION: Despite multiple features similar to lower-grade gliomas, patients with DAG-G experience clinical courses similar to GBM. Such findings reinforce the need for biopsy and subsequent analysis of molecular features associated with any astrocytoma regardless of presenting characteristics.

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