Glioblastoma: Molecular Analysis and Clinical Implications.

Huse JT, Holland E, Deangelis LM.

Department of Pathology and Brain Tumor Center, Memorial Sloan-Kettering Cancer Center, New York, NY 10021; email: husej@mskcc.org.

Abstract

Glioblastoma, the most common malignant primary brain tumor, carries an invariably poor prognosis. Targeting underlying biological foundations of the disease will be crucial to developing more effective treatment strategies. Although increasing evidence clearly indicates that glioblastoma is a molecularly heterogeneous disorder, recent large-scale expression profiling has provided a framework for categorizing the tumor into 3 to 4 distinct subclasses, each with its own characteristic genomic alterations. As such, there remains the enticing possibility that glioblastoma subclasses themselves might represent predictive biomarkers, particularly in the context of specific targeted agents. This review focuses on how best to ascertain the functional relevance of molecular subclass in glioblastoma through both preclinical and clinical investigations. The availability of appropriate mouse modeling systems along with expanded molecular profiling capabilities in the clinical setting should aid such efforts. However, significant systematic challenges remain, particularly in the setting of clinical trials. Expected final online publication date for the Annual Review of Medicine Volume 64 is January 07, 2013. Please see http://www.annualreviews.org/catalog/pubdates.aspx for revised estimates.

PMID: 23043492 [PubMed - as supplied by publisher]