
Castro BA, Aghi MK.

Abstract

Initial enthusiasm after promising Phase II trials for treating recurrent glioblastomas with the antiangiogenic drug bevacizumab—a neutralizing antibody targeting vascular endothelial growth factor—was tempered by recent Phase III trials showing no efficacy for treating newly diagnosed glioblastomas. As a result, there is uncertainty about the appropriate indications for the use of bevacizumab in glioblastoma treatment. There are also concerns about the effects of bevacizumab on wound healing that neurosurgeons must be aware of. In addition, biochemical evidence suggests a percentage of tumors treated with bevacizumab for an extended period of time will undergo transformation into a more biologically aggressive and invasive phenotype with a particularly poor prognosis. Despite these concerns, there remain numerous examples of radiological and clinical improvement after bevacizumab treatment, particularly in patients with recurrent glioblastoma with limited therapeutic options. In this paper, the authors review clinical results with bevacizumab for glioblastoma treatment to date, ongoing trials designed to address unanswered questions, current clinical indications based on existing data, neurosurgical implications of bevacizumab use in patients with glioblastoma, the current scientific understanding of the tumor response to short- and long-term bevacizumab treatment, and future studies that will need to be undertaken to enable this treatment to fulfill its therapeutic promise for glioblastoma.

PMID: 25581938 [PubMed - in process]