Bevacizumab and chemotherapy for recurrent glioblastoma: a single-institution experience.


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OBJECTIVE: Bevacizumab has been shown to be effective in the treatment of recurrent glioblastoma in combination with chemotherapy compared with historic controls but not in randomized trials. METHODS: We conducted a retrospective analysis of patients treated for recurrent glioblastoma with bevacizumab vs a control group of patients, comparing progression-free survival (PFS) and overall survival (OS) between the two groups, and performed subgroup analysis based on age and performance status. Expression of vascular endothelial growth factor (VEGF) based on age was examined using DNA microarray analysis. We also evaluated the impact of bevacizumab on quality of life. RESULTS: We identified 44 patients who received bevacizumab and 79 patients who had not been treated with bevacizumab. There was a significant improvement in PFS and OS in the bevacizumab-treated group. Patients of older age (> or =55 years) and poor performance status (Karnofsky Performance Status < or =80) had significantly better PFS when treated with bevacizumab, and bevacizumab-treated older patients had significantly increased OS. VEGF expression was significantly higher in older glioblastoma patients (aged > or =55 years). Patients treated with bevacizumab also required less dexamethasone use and maintained their functional status longer than the control group. CONCLUSIONS: Bevacizumab in combination with chemotherapy may be a more effective treatment for recurrent glioblastoma and warrants further randomized prospective studies to determine its effect on survival. Bevacizumab also has more effect in those with older age and might reflect biologic differences in glioblastoma in different age groups as seen with the expression of vascular endothelial growth factor.

Publication Types:
- Research Support, Non-U.S. Gov't

PMID: 19349600 [PubMed - indexed for MEDLINE]