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Role of bevacizumab therapy in the management of glioblastoma.

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Abstract

Glioblastoma is one of the most common primary brain tumors and one of the most difficult to treat. In population-based studies only 30% of patients will survive 1 year and in the most efficacious surgery, irradiation, and chemotherapy clinical trials approximately 20% will live 2 years. Bevacizumab is a recombinant, antivascular epidermal growth factor receptor (VEGF) monoclonal antibody with 6 VEGF-binding residues that binds to VEGF, preventing VEGF from binding to its target, VEGFR-1 and VEGFR-2, on endothelial cells. Through its binding to VEGF ligands bevacizumab reduces tumor angiogenesis and vasogenic brain edema; the consequences are that bevacizumab reduces the rate of glioblastoma tumor growth and its associated tumoral edema, thereby improving quality of life and survival for patients suffering from cerebral glioblastoma. In this review, we will summarize the studies that led to the use of bevacizumab in glioblastoma and the potential side-effects and complications that can be associated with its use and, finally, new opportunities for drug combinations with bevacizumab.

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