Therapeutic options for recurrent high-grade glioma in adult patients: Recent advances.

Despite of postoperative radiotherapy plus temozolomide for newly diagnosed glioblastoma multiforme (GBM) and improvements in the molecular characterization of high-grade glioma, these tumors continue to relapse. We reviewed all clinical studies of re-treatment published between May 2000 and September 2005. In groups of highly selected patients with re-treatment for GBM, median survival reaches 26-27 months. Re-treatment was stereotactic radiotherapy (mostly with additional chemotherapy) or re-resection plus either photodynamic treatment, radioimmunotherapy and temozolomide, or systemic and local chemotherapy. Thus, intense local treatment was always a component of more successful strategies. Additional data suggest that chemotherapy is more efficacious when minimal residual disease is present, although the recent trials have not uncovered a clear regimen of choice. Early trials of immunotherapy and toxin-delivery demonstrate the feasibility of these approaches and encouraging median survival times. Response to erlotinib was more common if tumors had epidermal growth factor receptor gene amplification, protein overexpression and low levels of phosphorylated PKB/Akt. Individual tailoring of such strategies based on molecular profiling is hoped to improve the outcome.