Anticancer Res. 2006 Nov-Dec;26(6C):4675-86.

Post-operative combined radiation and chemotherapy with temozolomide and irinotecan in patients with high-grade astrocytic tumors. A phase II study with biomarker evaluation.

Fountzilas G, Karkavelas G, Kalogera-Fountzila A, Karina M, Ignatiadis M, Koukoulis G, Plataniotis G, Misailidou D, Bobos M, Pectasides D, Razis E, Karavelis A, Selviaridis P.

Source

Department of Medical Oncology, Aristotle University of Thessaloniki, Thessaloniki, Greece. fountzil@med.auth.gr

Abstract

BACKGROUND:

Clinical studies have shown that temozolomide (TMZ) and irinotecan demonstrate activity in high grade astrocytic tumors (HGAT). However, the optimal schedule of administration is unknown.

PATIENTS AND METHODS:

In the present study, a total of 45 HGAT patients, 38 with glioblastoma multiforme (GBM) and 7 with anaplastic astrocytoma (AA), were treated with TMZ, 150 mg/m(2) on days 1-5, followed by irinotecan, 150 mg/m(2) on days 6 and 17, every 4 weeks for 6 cycles or until the occurrence of unacceptable toxicity or disease progression. Radiation therapy (60 Gy) was initiated on the first day of treatment.

RESULTS:

Twenty-two patients completed six cycles of treatment. Most frequently recorded side-effects included neutropenia (37%), nausea/vomiting (66%), diarrhea (31%) and infection (44%). Five episodes of vaso-occlusive disease, all of them fatal, were observed. After a median follow-up of 49.8 months, median progression-free survival for patients with GBM was 7.7 months, while median overall survival was 12.8 months. There were six long-term survivors, three of them with GBM. Two out of the five biomarkers studied, epidermal growth factor receptor (EGFR) and vascular endothelial growth factor-C (VEGF-C), were found to be overexpressed in 74% of the tumors, however they had no predictive value for progression-free or overall survival.

CONCLUSION:

The combination of TMZ and irinotecan, as administered in this study, was accompanied by high rates of toxicity, especially myelotoxicity and infection. Further development of this regimen in the treatment of HGAT is not recommended.