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The Safety and Activity of Temozolomide (TMZ) in Children with Recurrent Malignancies

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INTRODUCTION

Temozolomide (CCRG81045; SCH52365) is an oral second generation alkylating agent, which in prospective clinical trials, has shown promising activity in paediatric patients with recurrent solid tumours and particularly malignant gliomas. This novel agent has a broad spectrum of antitumour activity with relatively little toxicity.

AIM

To evaluate the efficacy and safety of TMZ as second-line chemotherapy in children with recurrent malignant gliomas or other solid tumours.

PATIENTS

Since April 2001 we have studied 9 paediatric patients (7 boys and 2 girls, median age 4.5 years) suffering from advanced solid tumours (7 high grade gliomas and 2 neuroblastomas). Surgery consisted of gross total resection in the 2 neuroblastomas, partial resection in 3 patients and biopsy only in 5 malignant gliomas. All patients had received prior chemotherapy and 5 had previously undergone radiation therapy. Patients were treated with TMZ 150mg/m^2. The dose was increased to 200mg/m^2 in the second cycle. Therapy was administered orally on the fist 5 days of a 28 day cycle.

RESULTS

9 patients received 56 cycles of TMZ and were included in this analysis. The therapy has been well tolerated. Nonhaematologic adverse events included nausea and vomiting (8/9) controlled with 5-HT_3 antagonists. Hematologic toxicity included grade 3/4 trombocytopenia (4/9) and grade 3/4 neutropenia (3/9). After 14 months of follow up, 2 patients are alive. The first one with diffuse optic gliomas achieved a good partial response, the second one with neuroblastoma has stable disease. 4 patients had a partial response duration of 4, 6, 7 and 10 months respectively before disease progression. 3 patients had progressive disease, unresponsive to TMZ chemotherapy.

CONCLUSION

Preliminary results from this study suggest that treatment with TMZ is well tolerated and may be useful in paediatric patients with recurrent solid tumours.