Original Article

**Phase II study of oxaliplatin in children with recurrent or refractory medulloblastoma, supratentorial primitive neuroectodermal tumors, and atypical teratoid rhabdoid tumors**

A pediatric brain tumor consortium study

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Abstract

BACKGROUND.

An open-label Phase II study of oxaliplatin was conducted to evaluate its safety and efficacy in children with recurrent or refractory medulloblastoma (MB), supratentorial primitive neuroectodermal tumors (SPNET), and atypical teratoid rhabdoid tumor (ATRT).

METHODS.

Patients were stratified as follows: stratum IA, first recurrence MB with measurable disease; IB, recurrent MB with only cerebral spinal fluid (CSF) positivity or linear leptomeningeal disease (LLD); IC, MB second recurrence; stratum II, recurrent SPNET; stratum III, recurrent ATRT. Patients received oxaliplatin, 130 mg/m² intravenously over 2 hours every 3 weeks. The primary objective was to estimate the sustained response rate in stratum 1A. Plasma ultrafiltrate platinum pharmacokinetics were evaluated.

RESULTS.

A total of 43 patients with a median age of 8.5 years (range, 0.6-18.9 years) were enrolled. In stratum 1A, 2 of 15 had partial responses (PRs, 1 sustained PR). No responses were observed in other strata. The most frequent Grade 3 and 4 toxicities included thrombocytopenia (25.6%), neutropenia (16.3%), leukopenia (12%), increase in serum alanine transaminase (ALT) (7%), vomiting (4.7%), and sensory neuropathy (4.7%). No severe ototoxicity or nephrotoxicity was reported. Plasma ultrafiltrate platinum pharmacokinetic parameters were similar to adults, with a median clearance of 12.2 L/hr (range, 4.4-30 L/hr) and median area under the curve (AUC₀–∞) of 9.4 μg/mL/hr (range, 6.2-13.9 μg/mL/hr).

CONCLUSIONS.

Oxaliplatin was well tolerated in children but has limited activity in children with recurrent CNS embryonal tumors previously treated with platinum compounds. Cancer 2006. © 2006 American Cancer Society.

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